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## ARTICLE I.

## INTERNATIONAL COMMUNICATION BY LANGUAGE.

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AMONG the innumerable progeny of novel ideas and speculations which have owed their origin to modern facilities of communication, is the suggestion which may be met with from time to time in European newspapers, and possibly also in American ones, that men will see so much of each other in the future, and feel so strongly the necessity for means of completer intercourse, as to gradually abandon many of the languages now spoken, confining themselves to two or three of the most highly developed, and finally, perhaps, resting satisfied with one. This idea has arisen at the same time with political conceptions of equal novelty, and of a strikingly similar character. The parallel political theory is that the world will come to consist of a very few great States, which finally, either by friendly agreement or the military predominance of one of them, will place the supreme government of the whole planet in the hands of a single council, perhaps even of a single individual, in whose person will be concentrated the world-power which was the dream of Alexander and Cæsar and Napoleon, yet only partially realized by the mightiest of those three conquerors. There is unquestionably a movement both in politics and in languages which seems to lead in this direction, and to lend some countenance to speculations so apparently extravagant as these; but at the same time there are

tendencies of an exactly opposite character which may have a strongly neutralizing effect, so as to prevent forever the full accomplishment of such results as those just indicated. Thus, although the peoples agglomerate into mighty States, their feelings of nationality are certainly stronger than they were before recent changes. The Italian or German of to-day has feelings of national pride and importance that could not by any possibility have been experienced by the Tuscan or Bavarian of twenty years ago; and even the defeat of France has produced in that country a heat and concentration of national sentiment unknown under the Second Empire. Successes and failures may equally contribute to enhance the strength of national sentiment. The success of the United States in overcoming a great rebellion augmented it, just as the failure of France in a great foreign struggle augmented it also. And it does not follow that because people belonging to the same nationality can join together and form a nation, others who belong to different nationalities can join together and do the same thing, unless by the gradual process which may be called the absorption of immigrants.

If the nationalities remain, the languages will remain along with them. It is possible, no doubt, for a nation to have very powerful national feelings without a language peculiar to itself. It may have been founded by colonists, like the United States, and retain the language of the mother country; or it may be a little country surrounded by large neighbors, and use their languages as Switzerland uses French, German, and Italian, all the while preserving an intense sentiment of nationality though its languages are diverse, and all three of them foreign. But it is difficult to conceive by what arts of persuasion you could induce a great independent State, that has a tongue of its own, to abandon that tongue voluntarily and adopt another in its place, merely in order that there might be fewer languages on the surface of the earth, and less of Babel confusion. A very good argument might be made out for the abandonment of French, for instance. There can not be a doubt that English is at the same time simpler, more copious, and more useful because more widely spread, while its literature is incomparably richer. Whether for purposes of business, or of study or travel, English is a more valuable possession than French. Yet what a hopeless enterprise it would be to persuade the French to abandon the tongue which is their own peculiar inheritance! It is conceivable that if, after 1815, France had been divided like Poland, which she easily might have been, a system of rigorous repression, applied with unrelenting and

systematic cruelty, might in the course of ages have stamped the language out, and substituted for it the languages of the conquerors; but it is inconceivable how such a result could ever be brought about by the arguments of linguists. Nor would the time be well chosen just at present to offer similar arguments to Germany and Italy. They owe their unity chiefly to their languages, and are therefore likely to cherish them for ages, the duration of which it is impossible to foresee.

The uneasiness felt in traveling in countries of whose languages we are ignorant has given rise to these speculations about a possible future unity of language, and also to speculations of more modest and practicable proportions about a universal tongue, which, without displacing the languages actually existing, might be learned in addition to them by the educated class of every nation. Some have gone so far as to imagine the possibility of creating an artificial language, as you might make a lump of artificial stone, and it has been thought that a language created by human ingenuity in this perfectly conscious way would have great advantages in simplicity and consistency, and therefore be much easier to learn. One or two linguists have, we believe, actually attempted the construction of such a tongue, and although the task is one of the most formidable proportions, it may not be beyond the capacity of a man with great knowledge of the true laws that have governed the growth of the natural languages. It is probable, however, that if an artificial language were elaborately invented, and adopted by a certain number of clever men, it would be found hard and inflexible, and totally wanting in those rich resources of expression by phraseology which comes from experience alone. Hence the skepticism with which this scheme has generally been regarded by those who were clearly aware of the true nature of language. "You might invent the words," they say, "but you could not invent the thousand happy turns of expression that convey so much more than the words themselves convey." So it is believed most generally, and with good reason, that if any universal medium of communication is felt to be a necessity for mankind, the only practical way to attain it must be to choose some language already existing and make it the common medium of intercourse among men of education everywhere.

This has been done already in a natural, unconscious way. There has never been a formal convention among nations to choose a language for their intercourse, yet for long ages Latin was so employed, and French has since taken its place, though without occupying it

entirely. We are certainly worse off in Europe for a medium of general intercourse than were our predecessors in the time of Queen Elizabeth. They all learned Latin at school, in a slow way perhaps, yet in a thorough and scholarly way, and it was a substantial possession for them afterward when they used it for political or literary correspondence; but the Englishman or German of to-day is generally very far indeed from any thing like correct scholarship in French. The new arrangement by which French was adopted in the place of Latin, instead of some other modern language, may possibly have been caused by the linguistic incompetence of the French themselves, which is proverbial in Europe. Their language may have been adopted from necessity, because it was found that their diplomatists could learn no other. The ambassador who represented France at Berlin at the outbreak of the last war did not understand German, and was therefore, in a most important and even essential point, actually less qualified for his post than an ordinary newspaper correspondent would have been, or even a commercial traveler. If a modern language is to be selected as the common medium, it is clear that the State of which it is the native tongue will profit by the choice, if indeed we may consider it a benefit to be exempted from a study so useful for the development of the faculties. The German Government appears at one time to have entertained the project of displacing French as the language of diplomacy; but a common medium of some kind is so much of a necessity that the most recent idea is to seek it in modern Greek. This is not so wild an idea as at first sight it may easily appear. We are told that modern Greek is still near enough to the Greek of Plato for our study of the ancient language to prepare us admirably for the modern one, and most of us who have received what is called a liberal education know something, at least, of the former. Besides this, there is a steady tendency in Greece itself to recur to ancient forms, just as the best English poets and prose writers of the present day recur affectionately to turns of expression which were considered obsolete by our grandfathers. But the strongest argument in favor of modern Greek is said to be its perfect adaptability to the expression of new ideas and the nomenclature of new things, in which it is greatly superior to the old common medium, Latin. The wants of general society in a language, with its new sciences and arts, must be vastly more extended than the wants of an ancient body like the Church of Rome, which still uses Latin in some degree as a living language. There are certainly a few Roman Catholic ecclesiastics, we have no means of

ascertaining how many, in whose minds Latin is still vigorously alive, though not the Latin of Cicero; but even this change in the language is itself a proof of vitality, for there is no permanence in any human speech until it becomes a fossil. Some of these ecclesiastics speak Latin with an astonishing fluency, and write it with great rapidity; but the accomplishment must have been (at least to this degree of perfection) very rare at the Council of the Vatican, or the differences of pronunciation must have rendered it much less useful than might have been expected. The Pope himself uses French most frequently in his personal intercourse with foreigners of all nations, whether laymen or ecclesiastics. The advantage of Greek is that it is habitually spoken by living men, and that it would be so easy to have schools at Athens for language, as the French have one for fine art. These schools would at least settle doubtful points in pronunciation, which always constitute one of the greatest practical hindrances to human intercourse.

There has never been an epoch in history at which international communication was so general as it is to-day, and yet there has never been an epoch so unprovided with a satisfactory means of carrying it on. With his hereditary Latin, and his thoroughly acquired Greek, an ancient Roman gentleman could go to any part of the world that he cared to visit, and hold easy intercourse with his equals. The cultivated Italian or Englishman of Queen Elizabeth's time went about talking Latin well enough to converse upon subjects that were worth talking about. Here is a little scene which occurred at the University of Oxford in 1584, when Giordano Bruno visited it. Bruno was beginning to discourse upon the theory of Copernicus, when a certain doctor asked him if he could speak English, and the answer came that Bruno only knew a few of the commonest words. When asked, further, why he gave so little attention to the English language, the Italian philosopher answered at once, "Che gli onorati gentiluomini, coi quali soleva conversare, sapevano tutti parlare o latino o francese o spagnuolo o italiano." And now mark what follows, and think whether our own century could match it or not: "*La conversazione incominciò adunque in Latino.*"

Here are a number of gentlemen, men of the world, and doctors of the university, sitting at their ease round a supper-table, and because a foreign philosopher happens to be present, they all turn the conversation quite readily into Latin, the subjects being the highest speculations of the time, and they go on with the greatest animation. Evidently these men really did possess a medium of communication

which is practically lost to us. If we were to attempt, without the most labored preparation, a Latin discussion on the Copernican system, we should find ourselves struggling in such Latinity as that of Lord Dufferin's famous speech at the Icelandic dinner-table. We might use Latin cleverly in fun, as Lord Dufferin did, but we could not use it in serious earnest for hours together, as those Elizabethan gentlemen did.

The next question that concerns us is whether we possess a substitute for their Latin. There is a general belief that our French is this substitute, and so no doubt it might be if it were learned with any accuracy and thoroughness; but it is surprising how rare is any accurate scholarship in French. Foreigners do not, as a rule, appear to take any pride or pleasure in being delicately accurate in French, although the language fully rewards the student who cares for accuracy, and pursues it. The plain truth is that almost every English gentleman has a contempt for French; and it is not easy to get over such a feeling as this, because it is grounded on the deepest national antipathies. One of the greatest advantages of Latin as a means of general intercourse was that no nation felt any hatred or jealousy of the ancient Romans, whose power had ceased to exist; and there was considerable tact in the proposition to select modern Greek for the same use, since the Greece of our day is much too insignificant a State to excite bitter feelings in the breasts of cultivated foreigners. M. Taine has an anecdote about a French teacher in England, who fished for a compliment by saying to an English gentleman, "You must esteem our language very highly, since you have it taught to your children;" but the Englishman answered, with more veracity than politeness, "No, we don't—we despise it." Even Sam Weller's father, in Pickwick, shared this prevalent feeling when he observed that he didn't think much of that language, as Frenchmen who intended to say "water" said "O." There is no such feeling in England about Italian; although whatever objections may be urged against French might with at least equal force be urged against the sister tongue; but Italy is a political pet of England; and France has been much too big and too combative for a pet.

It would be an amusing yet thankless task to trace some of the curious inaccuracies which have had their origin in this contempt. A recent critic has asserted that Alison's History of Europe abounds in faults in French. We never read that History, but daily experience in English literature in general convinces us that the critic must be right. It is almost inconceivable that any English writer

should be able to quote French correctly. Look at our journalism, for instance! It teems with French quotations, and in every quotation there is pretty sure to be one blunder when there are not several, while the ignorance which fails to detect these is accompanied by the keenest contempt for journalists on the other side the Channel who do exactly the same thing with English words and sentences. We remember finding in an English newspaper a most cutting little article on the errors of French journalists, and yet in the very same paper there were six glaring blunders in French orthography or grammar. Some of these errors, in both countries, are merely printers' *errata;* but many others are clearly due to persistent neglience and ignorance. Just as no Frenchman was ever able to spell the Isle of Wight or the Whig Party with any certainty, because the relative positions of the *g* and *h* embarrass him; so the Englishman is liable to make bad shots in matters of accent which in French are of the utmost importance, since they affect both grammar and pronunciation. It is said of French journalists that they can never learn how to spell the names of English public men; but to this day it may be doubted whether any body in England really and firmly knows how to spell the name of the well-known author of the *Vie de Jésus.* Mr. Matthew Arnold spells it Rénan, which is wrong; others spell it Rènan, which is equally wrong; a further experiment is still possible, which would be Rênan, but that would not be quite right either. In the same way we find Doré frequently written Dore, quite as great a mistake as if we were to call an Englishman Door when his name was Dorry; and the town called Mâcon (famous for its wine) is nearly always written Maçon by English people, though they would be hard on a Frenchman if he made York into Yorse. But the mere spelling of a name or the misplacing of a title is a matter of minor importance, and does not necessarily involve gross ignorance of the language. The wonderful and beautiful blunders are those which prove that the writer has no notion how the language is constructed, in which he sticks odd bits of it together that can not possibly fit, and throws a whole sentence into irremediable confusion by altering the meaning of some particularly important word that he has utterly failed to understand. Then there are perilous transitions from one language to another, like passing from ship to ship in the open sea. Speaking of Marshal Mac-Mahon, an English writer thought it would look well to finish his leader with a bit of the marshal's own tongue, so he tacked a line of French to the end of his own English in this wise: "the marshal has *s'est suicidé*"! Now how charmingly

that little word "has" comes in! See how perfectly innocent the Englishman is of the value of the auxiliary here! But there are wonders beyond these wonders. The enterprise of British journalism does not rest satisfied with mere novelties of verbal arrangement: it enriches the French language itself by the addition of words that no Frenchman ever heard of or even imagined. Thus, instead of saying "horsewoman," one English journalist habitually writes "an *équestrienne*." Mrs. General Baynes, in one of Thackeray's novels, writes to her sister that she finds Hindustani of the greatest use to her in France, for whenever her French runs short she supplements it with that Eastern tongue, which answers the purpose admirably. In our ignorance of Hindustani we infer that "*équestrienne*" must be a Hindu word, for there is no such word in French. On the same principle a London shopkeeper has advertised "*Berceau-nettes*" for many years, which is cockney-French of the most perfect and exquisite description.

It may, however, be very reasonably objected to cases of this kind that although there is nothing to prevent a journalist or a shopkeeper from being highly educated, it does not follow of necessity that he is so. These occupations, it may be urged, being open occupations, do not afford any guarantee of culture, and it is unreasonable to expect uncultivated people to know the language which is the common medium of communication among the learned, whether it be Latin as in Bruno's time, or French as it is supposed to be in our own. But what seems to me most deeply to be regretted is that the *educated* men of the present day do not really and truly possess any certain means of communication with each other; and that in this respect they are so much worse off than their predecessors, such as Milton and Bruno, whose Latin, from thorough preliminary scholarship and incessant practical use, was always an available instrument of expression. Our men of highest culture seem just as liable to inaccuracies in their French as our ordinary journalists and shopkeepers. It is ungracious to name a man of deserved reputation in connection with this topic, but in order not to dwell in vague generalities we will give a specific instance of what we mean. Let us mention, then, one of the most cultivated men in England, a writer of quite singularly beautiful English, whose mind is a rare example of delicate and true taste refined and enlightened by extensive knowledge and wide sympathy, Mr. Walter H. Pater, Fellow of Brasenose College, Oxford. Mr. Pater published a book not very long since, containing such French as this: "*La philosophie*," he says,

"*c'est la microscope de la pensée;*" and on the very next page he says, "*les hommes sont tous condamnés a morte avec des sursis indéfinis.*" Fancy a scholar, fond of quoting, who does not know either his orthography or his genders! We can not think that Milton ever quoted or wrote Latin in this slovenly way. Another English author of reputation gives a list of authorities at the beginning of one of his works, among which we find that he has consulted the "*Catalogue spéciale du section Russe.*" The cultivated English of the other sex appear equally liable to these little errors. For example, Mrs. Grote, wife of the distinguished historian, wrote a Life of Ary Scheffer, in which there are several curiosities, and here is one of them. She makes poor Louis Philippe say of the republicans, "*dès qu'on leur montre le bout du corne ils vous tournent le dos.*" Now, if that unfortunate sovereign could utter such French as this, what are we to think of the reputation for literary culture which belongs to the House of Orleans?

The French words constantly used in English are often used wrongly. It would be interesting to know the origin of our habit of calling out *encore!* when we wish to hear a piece of music over again. It is just possible that in some bygone age the French may have done this, but certainly no living being ever heard a Frenchman call out anything but "*bis*" on these occasions. Then we have adopted the French word *morale;* but it is never used by Englishmen, never even by the most learned historians, without a blunder. The learned historians say, for example, "Wellington was now determined to carry on the war *à l'outrance,* and the *morale* of his army was excellent." Both these expressions are blunders. *A l'outrance* is bad French; it ought to be *à outrance;* but *morale* used in this sense is still worse. It is hardly possible to imagine a more absurd mistake, and yet it is universally prevalent among English writers. The historians mean to say "the *moral* of the army was excellent," or, in plain English, that the men were in a cheerfully resolute temper; whereas to say that the *morale* of an army is good is to affirm that its theories of morality are sound, or in plain words that the soldiers are convinced that they ought not to commit adultery, etc. *Le moral,* used in this way, means mental firmness, cheerfulness, courage to face difficulties and bear privations without being cast down into low spirits; *la morale* of a body of men means their theory, more or less severe, of moral duty and obligation. Thus a lofty *morale* may exist at the same time and in the same person with a low *moral.* You may be utterly discouraged as to tem-

poral affairs, you may feel quite certain that your worldly position is hopeless, that disease and ruin have you in their clutches for the rest of your days on earth, yet at the same time your *morale* may be of an elevation and purity to gladden the angels in heaven. The converse is also true. Your *moral* may be excellent in the military sense, that is to say, you may be merry under fatigue, and look death in the face with a careless jest on your lips, yet have such a low *morale* that you may see no particular reason for not committing the seven deadly sins on the first seven favorable opportunities. Cromwell's army had both, the ideal knight of the middle ages had both, the armies of Napoleon had one without the other. The two things are so independent that their conjunction or their severance is a favorite subject of the poet and the novelist. You have them together in Sir Galahad, together in Scott's great heroine Rebecca, but only one of them in Brian de Bois-Guilbert.

Now to any one who has thoroughly realized the importance of such a distinction as this, the prevalent and constantly recurring blunder of English writers seems evidence that they are outside of French—evidence, consequently, that French is not studied with sufficient accuracy to be a clear medium of communication on moral subjects. How is it possible to discuss such subjects in that language without being aware of so wide a difference in the value of words as that which we have just indicated? And we find the same unfitness to discuss literary questions in French, owing to the habit of first translating French expressions into literal English, and then judging of them by the translation. This process was curiously illustrated by a recent criticism on a living writer, not famous, yet a gifted and delicate poet. There was a line among some very exquisite verses with the words,

"Et l'azur plein de colombes."

The English critic asked his readers if they had ever heard any thing so absurd as "the azure full of pigeons?" and laughed at the author pitilessly. But to a French ear the expression is faultlessly beautiful; it is perfectly descriptive, and thoroughly in accordance with the true genius of the French tongue. The way in which this pernicious habit of translating a foreign tongue into our own and then judging of it by the translation excludes us from the true genius of the language and therefore from any just appreciation of its literature, may be illustrated by a single word, the word *sauvage* It occurs frequently in French verse and in the best descriptive literature; and now let me show by an anecdote, trifling in itself, yet

interesting in this connection, how entirely such a word may be misunderstood. We remember an English officer at a *table d'hôte* who spoke French fluently enough and asked for *canard sauvage*. Then turning to me with a laugh, he said, "How absurd! *savage duck!*" Now pray observe how incapable this officer was of entering into the true meaning of the word *sauvage*, or at least of dissociating it from the perverted English meaning of *savage*. The idea of ferocity, as the ferocity of a savage dog, which seemed incongruous and therefore absurd in connection with a duck, is a purely English idea, not belonging to the foreign word at all. Consider the derivation of *sauvage*. It comes from the Provençal *salvage*, then you have it in Italian *selvaggio*, from the Latin *silvaticus*, from *silva*, a wood. And when a Frenchman hears the word "sauvage" his mind is transported at once to wild places, such as woods and meres, where wild-ducks are often found. Just so a Frenchman calls a wild plant *une plante sauvage*, and quite rightly (a plant of the woods), without suspecting that some English critic may laugh at him for saying that he knows a bank whereon the savage thyme grows.

It is unnecessary to produce more numerous instances of the sort of misunderstanding which is fatal to perfect literary intercourse in a language that has not been really mastered or assimilated. The position of the average Eurōpean, not a Frenchman, supposed to be well-educated, may be described in a sentence. His Latin is useless for intercourse from his want of facility, and his French from want of accuracy. The absence of a universal means of communication produces the modern polyglot, who knows six languages well enough to order his dinner, but not one of them well enough to employ it in intellectual intercourse. The want of the age is a good common medium, available for all social and intellectual purposes, thoroughly taught to every educated child from its infancy, and constantly practiced afterward. If, as appears to be the case, our national jealousies and antipathies prevent the hearty adoption of French for this purpose, while the same causes might limit the use of English, it really does seem as if a solution of the difficulty might be found in modern Greek. The first step would be the creation of an international society having for its special purpose the use and development of the common medium of intercourse. We could not hope for the interference of Governments till private association had done its utmost; but in course of time, and in a more enlightened generation than our own, it can scarcely be too much to hope that as education is already considered to be a national question, it may

come to be considered an international concern also, and that the Governments of the future may agree in adopting a common means of intercourse for their people, just as in the present day several of them have agreed to adopt a common monetary system. In the course of a single generation, if the leaders of the human race so willed it, all educated men and women might possess a common language in addition to their own national one, and this language would quickly create a literature of its own addressed to every cultivated person on the planet. It would naturally be used for conversation and correspondence among educated people of different countries, not only for intellectual, but even for commercial purposes also.

The one serious difficulty that may be foreseen already, is the difficulty of conveying to students in different countries the exact shade of meaning which a word or an expression should be understood to bear. We already feel this very often in our own language when dealing with subjects that seem to require new and elaborate definitions of old words, and we have to make such definitions afresh in order to prevent misunderstandings which would be sure to arise without them. Every lawyer is familiar with this difficulty, and takes care that not only the general sense of the word, but the special sense that it is to bear in a document, shall be clearly settled and explained. Now every language is so closely bound up with national habits and sentiments, that it is extremely difficult to give it a meaning which may be current every where. Let us test this by one or two simple experiments. Try to translate into any other language the expression "it is un-English." The difficulty in turning this into French is that *Anglais* and *English* do not mean the same thing —there are deep reserves of international hostility, or at least of disapproval, in the word *Anglais*, and equally deep reserves of national pride and self-complacency in the word *English*. "*Une jeune fille Anglaise*" does not mean what "an English girl" means—the French expression includes a reserve of disapproval concerning what seems an outrageous amount of liberty accorded to the bold young creature in question: the English expression has not the slightest reserve of that kind, but is full of pride and praise. "*A Frenchwoman*" in England is generally understood to mean an adulteress—*une Française* means an elegant and agreeable person who knows how to dress neatly and talk well. "*A French girl*" implies a strong suspicion about morals and religion—"*une jeune fille*" implies the most absolute confidence in an ideal purity and faith. So you can not translate *clergyman*

into French—*prêtre* conveys a wholly different idea, as, in another way, does *pasteur*. You cannot translate *House of Commons* into French; the French newspapers always translate it *Chambre des Communes*, which, though near in sound, is as wrong as it possibly can be, for we have no *communes* at all in England, the English borough being quite a different thing, while many members of the House of Commons are elected by the counties. Besides, the French expression misses the central idea of the English one, which is that the men elected are *common* men, that is to say, not peers of the realm. Any attempt to explain to a Frenchman the shade of meaning implied by the word "commoner" would be futile; we need the familiarity with national tradition to perceive it. And all this is strictly reciprocal. There are just as many instances in which national habits and traditions make French expressions unintelligible out of France. Alexandre Dumas wrote a play lately, called *Monsieur Alphonse*. Now surely this looks simple enough, but it is not so simple as it looks. Several Italian journals tried to explain the meaning of *Monsieur* as used here in full before the Christian name, but they made some very wide shots indeed. Every Frenchman, when he sees "*Monsieur Alphonse*" advertised on the walls, seizes at a glance what Dumas intended to convey, but how explain it to a foreigner? And yet every foreigner thinks he knows what *Monsieur* means.

It might be thought, however, that with reference to matters more closely connected with the higher culture, language might have a meaning more generally accepted and understood. Yet even here the same difficulty presents itself. An excellent instance of this occurred in a speech of Mr. Lowe, when he was Chancellor of the Exchequer in Mr. Gladstone's administration. He was speaking of universities, and he said, with his usual *brusquerie* of manner, "People talk of the French university—there is no such thing as a university in France." Mr. Lowe was quite right in what he actually said, for as he used the English word he might fairly argue that there is nothing in France answering to the English conception of a university. But Mr. Lowe was far from being so near the truth in what he thought, and in what he conveyed to his audience, which was that the French in saying that they had an "université" advanced claims that could not be supported. The word in the English sense means a large group of magnificent colleges and halls, with beautiful gardens, libraries, museums, and immense wealth to sustain them, clustered together in or about some quiet rural town, and frequented by young men who have finished their school-days, and pursue, or are supposed

to pursue the highest studies with the help of the most cultivated teachers in the country. It is perfectly true that there is nothing of this kind in France. The word in the French sense means a vast universal system of public instruction, with great cheap public schools scattered all over the land, but all pursuing the same methods, and a number of *faculties* for examination in some of the principal towns, the whole organization governed by the Minister of Public Instruction. There is nothing of this kind in England, and a Frenchman might say with truth, in answer to Mr. Lowe: "Il n'y a pas d'université en Angleterre." At the same time, and for the same reason, the word "professor" has not the same sense in its English and French forms. A "Professor" in England means a distinguished scholar who has accepted a highly honorable position in one of the universities, where he gives some of the results of his scholarship to an audience prepared to receive them. "Un professeur" means a wretchedly paid teacher in a cheap school, who lives in mortal dread of a superior officer in the same building, and who has, generally speaking, no position whatever in the society of the place he lives in. And now we see the difficulty of using another language; for if we say of an English university professor, "*Il est dans l'université, il est professeur*," we convey the idea that he holds a position much inferior to that of an usher in an English grammar-school; and yet we are not speaking a language supposed to be generally unintelligble, we are not speaking the language of some tribe in the heart of Africa, we are speaking French, which is said to be the universal medium of communication for cultivated people all over the civilized world.

While fully admitting the importance of this difficulty, we may, however, observe that the tendency of modern life is to place things more and more at the disposal of people in different countries, so that if one country has any decidedly good thing, the others are pretty sure to adopt it before long. A language may be truly universal when the things it speaks of are universal. The words "sun," "moon," "stars," might be learned every where with their exact meaning; the word "baronet" can only be accurately understood by some one who has lived in English society and seen exactly what the title is worth. Now it is scarcely too much to say that every year makes things more in common among nations. The spread of the railway system is one of the most obvious instances of this; but there are many others. All words relating to railways would be really and truly understood by people in different countries; and so would the words that belonged to the use of telegraphs. Every thing

relating to science would be clearly understood in the universal language; and as it is said that the "pencil speaks the tongue of every land," so the universal language ought to be generally intelligible on matters connected with the fine arts, at least to those to whom the fine arts themselves are intelligible. War and commerce, being international affairs, might be equally well understood in the universal language.

Whatever may be the objections and the difficulties, the firm and decided choice of some language for international communication would assuredly lead to a more endurable condition of things than the present state of international dumbness or misunderstanding. Consider the wretched business which is called traveling in these days. People set off for foreign countries, and when they get there learn no more about the inhabitants than just what may be seen with the bodily eyes, having no communication with the *minds* of foreigners. The English and Americans are accomplished masters in the art of getting through foreign countries with the least risk of contamination from contact with any educated natives. Men of culture did not travel so in Bruno's time; Montaigne did not travel so; Milton did not travel so. They went to see and converse with the best and most accomplished men; the modern tourist goes to stare at a big mountain from the window of a big hotel, and talks only to his fellow-countrymen, or to native innkeepers and waiters who know his own language better than he knows theirs. Even the men of culture in the present day are much more isolated than Milton and Bruno were, and too frequently find themselves compelled to travel in the ordinary tourist fashion, seeing Switzerland, but not the Swiss; Italy, but not the Italians; if indeed Switzerland and Italy are any thing but so much physical geography unless you know the people who give them life.

ARTICLE II.

# THE ARCHITECTS OF THE AMERICAN CAPITOL.

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A WORK of architecture or art is a poem in concrete form. The poet gives us thoughts and images by means of happily wedded words, the painter by gracefully blended colors and lines of shade and light, the architect combines and animates dead matter so that buried quarries are lifted into flying buttresses and columns and living walls, great iron domes swing in the air like clouds, and stones are made eloquent with speech. The great architect is the man of thought and of action, of ideas and deeds, of plans and performances, of poetical imagination and practical execution, of faith and works. Men who rear great buildings are great men. Ictinus, Callicrates, Phidias, Bramante and Angelo, the builders of those noblest temples ever reared to the gods or to God, were the best and grandest men of the periods in which the Parthenon and St. Peters grew to maturity of beauty. Arnolfo and Brunelleschi were honored while living as statesman and philosophers were not, and when dead, their statues were placed as marble sentinels to watch over the Duomo, a century before Dante or Petrarch were awarded like honors in Florence. The finer feelings and better chords of our nature are still touched to tenderness by that "frozen music" and crystallized poetry of Zamodia, the Cathedral at Milan. A title, a place in every household, and immortality were won when St. Pauls was finished by its only architect, Sir Christopher Wren.

The architects of one of the most impressive and imposing civic edifices now existing, the Capitol at Washington, have not thus been honored, nor even yet made known. It is our purpose to trace the history of the builders of this great structure, to show what part of the work each one has performed, and to render honor to whom

honor is due. This history is preserved only in the unpublished letters of Washington, Jefferson, the Commissioners of the Federal City, and the scattered plans and papers of the surveyors and architects of the public buildings. It seems proper that we should place in more enduring form the history of a structure, which in adaptation to the uses and purposes for which it was built, and in architectural beauty, grace, and grandeur, is not surpassed by any Government building in the Old World or the New.

## ORIGINAL PLANS OF THE CAPITOL.

The duty of erecting suitable public buildings at the permanent seat of Government was intrusted by Congress to President Washington and three Commissioners to be selected by him. The original Commissioners of the Federal District were David Stewart, Daniel Carroll, and Thomas Johnson. They were succeeded in 1795 by a new board appointed by Washington, composed of Gustavus Scott, William Thornton, and Alexander White. These six men, under the direction of the first President, with whom they were in constant correspondence, and with the advice of Jefferson, first Secretary of State, exercised the chief control over the Federal City and its public buildings, prior to the removal of the Government to Washington in 1800, and until 1802, when their offices were abolished. The first Commissioners seem to have had ideas commensurate with the grandeur of the undertaking involved in laying out the seat of Government and erecting the buildings in which to transact the public business of a great Republic. In a letter of August, 1792, they write that they are determined to embrace a plan for a Capitol which may, from its extent, its design and taste, do credit to the age; and they speak of their connection with the work, writing to the Municipality of Paris, as "an honor that swells their ambition to express in some degree in the style of their architecture the sublime sentiments of liberty which are common to Frenchmen and Americans, by exhibiting a grandeur of conception, a republican simplicity, and that true elegance of propriety which corresponds to a tempered freedom." Unfortunately their resources were not so vast as their ideas. They must build, not as their ambition led them, but as their means allowed them. In the advertisement for designs for a Capitol, it appears that it was to be built of brick, with a conference room, and a room for the Representatives, each to accommodate three hundred persons, with a lobby or antechamber to the latter, a Senate room of twelve hundred square feet area, and lobby, and twelve rooms of six

hundred square feet area each, for committee rooms and clerks' offices.

To contrast the Capitol built with the one advertised for, we will digress to say that the completed Capitol contains one hundred and eighteen rooms or apartments used for public purposes, instead of fifteen, with an aggregate capacity of seventy-one thousand superficial feet; that instead of brick, it is built chiefly of iron and marble, with one hundred and thirty-four exquisitely graceful Corinthian columns, one hundred of which are monolithic; that the seating capacity of its Hall of Representatives is four hundred on the floor and one thousand in the gallery, and of the Senate, eight hundred in its gallery, with room on its floor for the Senators from a hundred States; and that each of these halls will admit on great occasions more than two thousand spectators. Its new wings alone cover a larger area than any cathedral in Europe except St. Peters.

When the 15th of July, 1792, arrived, the date named on or before which the plans for a Capitol should be handed in, no designs had been received of sufficient merit to meet the Commissioners' or the President's approval. The designs submitted were for the most part crude and fanciful sketches of impossible structures, originating with non-professional men or amateur architects. The arts, like the country, were in their infancy. The plan of George Turner is worthy of notice, because in it we find the first suggestion of a Dome. Washington writes from Mount Vernon, under date of July 23d, 1792, that he is "more agreeably struck with Judge Turner's plan than with any other." The Dome, in Washington's opinion, "would give a beauty and grandeur to the pile." But the plan did not provide for an Executive apartment, and lacked porticos and an imposing colonnade, features upon which the first President always insisted. Subsequently the Commissioners notified Turner that his plan was impracticable and was not approved. Other designs were discussed and rejected. On the 5th of April, 1793, the President gave his formal approval of a plan submitted by Dr. William Thornton, of Philadelphia, because "grandeur, simplicity, and convenience were combined" in it, and the advertised first premium of a building lot and five hundred dollars was awarded Thornton as the successful competitor.

This would seem to settle the question who should have the credit for the original plan of the Capitol; but it does not. Stephen Hallet, a French architect, instead of receiving two hundred and fifty dollars, the premium advertised for the second best plan, was

awarded five hundred dollars and a lot, the same as Dr. Thornton. In point of award the plans of Thornton and Hallet were placed on an equality. Subsequent examination proved that Dr. Thornton's design was architecturally defective and in many respects impracticable. He was not a practical architect, had studied drawing but three months in his life, and had furnished no designs for public buildings. His design was an ideal sketch rather than a practicable plan, very pleasing to the eye, but unaccompanied with drawings of ground plan, estimates, elevations, or sections, to explain the external or internal structure. To discuss the objections made by architects to this design, Jefferson, at the request of Washington, called together James Hoban, Stephen Hallet, Dr. Thornton, Mr. Carstairs, and Colonel Williams, the two latter friends of Dr. Thornton chosen by himself. This board of consulting architects decided, Jefferson informs us, that there were six valid, material, and insurmountable objections to Dr. Thornton's plan of a Capitol, not the least important of which was that many parts of the building wanted light and air in a degree that rendered them unfit for their purposes. Stephen Hallet was directed by Jefferson to make alterations in the plan. The valuable ideas in the original sketch were preserved by Hallet and rendered susceptible of execution. Thornton's impracticable design was reduced to "practicable form." All consulted agreed that in this "reformed plan" the objections before existing were entirely remedied, and that it was a design of great merit. The architects chosen by Dr. Thornton himself, pronounced the Hallet plan best, and the one which they as practical architects would choose to execute. They expressed the opinion also that the building executed according to Hallet's ideas would not cost more than half so much as if executed according to Thornton's. "After these opinions," says Washington, in a letter of July 25th, 1793, "there could remain no hesitation how to decide, and Mr. Hoban was accordingly informed that the foundation would be begun upon the plan as exhibited by Mr. Hallet, leaving the recess in the East Front open for further consideration." It is hardly necessary to add that what Jefferson termed that "very capital beauty," Dr. Thornton's portico to the East Front, was retained in the reformed plan, in accordance with Washington's wish. But the credit for furnishing the general design and detailed drawings for the different apartments in the Old North Wing, sections to guide in the internal construction, as well as the ground plans for the whole structure, must be given to Stephen Hallet, the first architect of the Capitol.

## STEPHEN HALLET.

Hallet was born in France, and educated as an architect in Paris. His professional character was formed in that center of good taste and home of the arts. His capacity as an architect received recognition in Paris, and he was frequently chosen to pass judgment upon the performances of other architects.

Mr. Hallet came to the United States just prior to the Revolution, and established himself in Philadelphia, where his professional abilities gave him constant occupation and considerable local reputation. He came to Washington in the summer of 1792, and so favorably impressed the Commissioners that in August of that year he was employed upon the public works at a salary of four hundred pounds per annum. He was especially useful to the Commissioners in bringing his professional knowledge to their assistance in passing judgment upon the various plans for the public buildings, and in preparing himself a design for the Capitol, embodying their own suggestions and those of Washington. This original plan was thought to possess great merit. The "reformed plan" by Hallet, upon which the foundations were commenced, and the corner-stone, under the present Law Library, laid by Washington, September 18th, 1793, was drawn after Thornton's accepted plan was condemned as impracticable. It resembled in general external features Thornton's rejected plan more than his own first design. Hallet had the satisfaction of commencing the execution of his own finally accepted design of the Capitol, but the foundations had only been laid when his duties became distasteful because of the superior authority exercised over him by James Hoban, who, as Surveyor or Superintendent of the Public Buildings, restrained the liberty of his action. He refused to be governed by Hoban's directions, declined to furnish the Commissioners with drafts, or deliver to them his own prepared plans, when requested. A replevin of the plans and papers was resorted to, and this legal controversy resulted in the dismission of Hallet, in June, 1794, after his being in the public employ for two years. Having been "so unlucky as to furnish the most suitable plan for that magnificent building," in the language of Mrs. Hallet, who bewailed "three children torn out of her breast by death here in this very spot," Hallet suffered great pecuniary losses by his removal to the wilderness of Washington, and was not permitted, as he had hoped, to bind his name with the name and rising glory of

America, by being given the execution of his own adopted design for a National Capitol.

### JAMES HOBAN.

The entire control of the building passed into the hands of James Hoban upon the retirement of Hallet. Hoban, as Surveyor of the Public Works, had supervised laying the foundations of the Capitol, although his chief attention was given to the Executive Palace or Mansion, which he designed and built.

He was a native of Ireland, and had settled in Charleston, South Carolina, prior to the Revolution. He came to Washington in July, 1792, to view the ground upon which the Capitol and President's House were to stand, that he might better prepare plans for these buildings. The letter of introduction from President Washington which he brought from Philadelphia, stated that he had been recommended by Colonel Laurens and other gentlemen of South Carolina, as well qualified both for planning and superintending the execution of public buildings. He was employed, July 18th, 1792, at a salary of three hundred guineas per annum, and continued to be employed on the Public Buildings at Washington more than a quarter of a century. Hoban's attention was first confined to making drafts for the President's House. The plan he first submitted was heartily approved by Washington, and the building was immediately begun under Hoban's personal superintendence. The Executive Mansion was wholly built and entirely rebuilt by him after its partial destruction by the British in 1814. Of this structure this much may be said with truth, that in view of the low state of the arts, and the very early period in which it was built, there is an adaptation in its interior structure to the purposes of its use, truly remarkable, and an adaptation to the growing wants of the nation's development, found in no other building erected at that early day. The worst feature of its exterior, the ill-proportioned Northern Portico, is an architectural excrescence, the growth of later years, for which Hoban was in no way responsible. Mr. Hoban's connection with the Capitol continued for ten years, or until 1802. In July, 1795, the foundations of the Old North and South Wings and Center were completed, and the work of setting the freestone of the North Wing walls commenced.

As usual, the contractors gave trouble. The Commissioners "believed them incapable of a cool, premeditated, and deliberate act of villany, which in its consequences might have occasioned the death of thousands." The stone-masons had built up the foundation walls

by emptying loads of broken stone and mortar from wheelbarrows upon them. This was called at the time the "Continental trowel." All the contractors and masons were dismissed. Hoban ordered the walls in which bad work had been done to be taken down, and henceforth gave the work his constant personal supervision. Confidence in Hoban's integrity, industry, and capacity continued to increase, and in February, 1797, he was appointed Superintendent of all the Executive Department buildings about to be erected. In March, 1798, the walls of the North Wing had been carried to within ten feet of their intended height, at a cost of $229,223. Early in 1800, the architrave, frieze, cornice, and roof of the Old North Wing were finished, and the present Supreme Court room and Law Library room were fitted up and put in order for the reception of the two Houses of Congress. The Executive offices were removed from Philadelphia to Washington in June, 1800, and within the following year the Old Executive Department buildings, under the energetic superintendence of Hoban, were all made ready for public use.

### GEORGE HADFIELD.

From 1795 to August, 1798, George Hadfield was employed as architect upon the Capitol. Hadfield was an Englishman by birth, and had been educated as an architect in London. He received at the British Royal Academy of Arts the first prize for excellence in architecture, which entitled him to travel four years abroad at the Academy's expense. He was declared by Benjamin West, President of the Royal Academy, to possess a knowledge of the theory of civil architecture superior to that of any young man in England. Through the influence of Colonel John Trumbull, the painter, he was engaged as the successor of Hallet. He had been but a short time employed when he became involved in perplexity because of a lack of drawings and elevations, and the almost insurmountable difficulty in making them from the meager and imperfect sketches and drafts which came into his possession. Dr. Thornton, then and during eight years one of the Commissioners, could furnish nothing. Hallet had refused to surrender his detailed drawings on the ground that they were his private property, while Hoban was the architect to execute, not to design. Hadfield insisted that the plan proceeded on was capitally defective. Washington had to interfere to settle a dispute which threatened to put a stop to the progress of the work. He conversed long with Hadfield and Hoban, with the plans before him. Hadfield explained that he proposed no change in plan that would cause delay or

increase expense. He contemplated discarding the basement and adding an attic story, and to follow the language of Washington—

"To add a Dome over the circular area or lobby, which in my judgment is a most desirable thing, and what I always expected was part of the original design, until otherwise informed in my late visits to the city, if strength can be given to it and sufficient light obtained."

The President's decision was in these words:

"I have told him (Mr. Hadfield) in decisive terms, however, that if the plan on which you have been proceeding is not capitally defective, I cannot (after such changes, delays, and expenses as have been encountered already) consent to a departure from it, if either of these consequences is to be involved; but if he can satisfy you of the contrary, in these points, I should have no objection—as he conceives his character as an architect is in some measure at stake, and in short, as the present plan is nobody's, but a compound of everybody's—to the proposed change; provided these things, as I have just observed, can be ascertained to your entire satisfaction."

The Commissioners, to whom this letter was addressed, overruled Hadfield, and the work proceeded on the old plan. Controversies subsequently arose concerning the cornice and roof of the North Wing, in which the Commissioners charged Hadfield with being deficient in practical knowledge, but admitted his good taste, his strict integrity, and diligent attention to his public duties. Mr. Hadfield drew the plans approved by Washington for the Executive Department buildings; but their execution having been placed in the hands of James Hoban, Hadfield declined to surrender them, and legal proceedings being threatened, his connection with the Capitol was brought to an end. He subsequently designed and built the City Hall of Washington, a creditable work of architecture.

### BENJAMIN H. LATROBE.

The connection of this distinguished architect with the Capitol of the United States commenced in 1803. He was residing at that time in Philadelphia, his professional reputation having been established by the public and private buildings he had planned and executed, among which were the Richmond Penitentiary, the Philadelphia Water Works, and the Banks of Philadelphia and Pennsylvania. The position of architect of the Capitol was offered him by President Jefferson, whose friendship he enjoyed during life, and whose acquaintance he had formed in Richmond, where Mr. Latrobe had settled soon after his emigration from England in 1796. There were at that early day few educated architects in America, as was shown by the fact that when plans for the Capitol were invited, in

1792, a collection of designs were submitted, most of which were beneath criticism. Many of the drawings exhibiting them came into Mr. Latrobe's possession, and were some years since placed in the Patent Office by his sons, as examples of the state of the arts at the period referred to.

Mr. Latrobe's attention was first directed to the Old South Wing of the Capitol, the construction of which he began in 1803. In order to carry out his own plans he found it necessary to modify those of his predecessors in many particulars, while retaining the original features in the general style of the exterior. In the commencement of his duties he availed himself of the services of George Hadfield, his predecessor, in preparing the working drawings of details of the building, and he expresses himself in high terms concerning the "talents, taste, and knowledge" of that architect. In 1807, Mr. Latrobe removed his family to Washington, in order to give his close personal attention to the several works, to the charge of which he had been appointed by the Government under the title of Surveyor of the Public Buildings. In addition to the Capitol, he was intrusted with the planning and construction of the Navy Yard Buildings and the Washington City Canal. The architect's correspondence, still preserved, comprises a complete and interesting history of the Capitol during the time of his having charge of its construction, from 1803 to 1817, and shows the serious difficulties under which the work was carried on. The dilatory action of Congress, the insufficient appropriations made for the work, the scarcity of good workmen, and of suitable materials within reach of the then imperfect means of transportation, the captious objections of officers of the Government to the plans and proceedings of the architect—these and other circumstances embarrassed the progress of the building to a degree not readily realized at the present day of ample pecuniary means and facilities for the execution of works of similar magnitude.

He generously acknowledges the valuable aid he received from John Lenthal, clerk of the works, who unhappily lost his life by the falling of an arch; and commends in strong terms André and Franzoni, the Italians who executed the various sculptures and carvings. In these ornamental parts of the building, Mr. Latrobe judiciously proposed to give as much of a distinctively national character as possible, by the introduction of such forms in the vegetable world as would best illustrate the peculiar productions of the soil and climate of the United States. This design led to the ingenious idea

of a form of column so original and so happy in conception and execution as to be deemed worthy to be called the American order. An example of it is to be seen in the vestibule of the Law Library in the basement of the Capitol. The shaft is composed of the stalks of Indian corn, the joints of which wind around it spirally, while the capital consists of the ears with their husks sufficiently opened to show the grain, with the intermediate spaces filled in by the tassel bent over, and a fillet or rope at the bottom. The base is a plain double molding, the stalks rising out of a circlet of the pointed leaves of the plant. The column is favorably noticed by Robert Dale Owen in his Hints on Public Architecture, and is illustrated by drawings. President Jefferson gave evidence of his admiration of the design by placing a model of it upon one of the buildings of his seat at Monticello. Mr. Latrobe also applied to the columns in the circular vestibule of the Old Senate Chamber, now the Supreme Court room, the leaves and flowers of the tobacco plant, of which the capitals are formed, with a pleasing and characteristic effect.

The limited resources of the Government at that early day, and the extreme notions of economy to which they led, rendered necessary the employment of such materials for the building as were within short distances of its site. Brick for the interior of the walls could be burnt upon the ground, for clay abounded, but stone suited to such a structure was beyond reach, and one of the chief difficulties of the architect was to choose between the varieties of inferior stone which were accessible. Among these, the freestone of the Acquia Creek quarries, being the cheapest and most readily delivered, was finally selected, from the necessity of the case, although it required a coat of paint to preserve it from disintegration when exposed to the weather. Mr. Latrobe, although thus compelled to use an indifferent stone for the walls, was averse to its employment in the columns of the interior, but he was obliged to do so in their first construction. Before their restoration after their destruction by the British Army in 1814, he visited the country upon the Potomac above Washington, in order to examine the beds of breccia marble which are found in Frederick and Loudon Counties. He ascertained that this marble was suitable for the shafts of the pillars, and could be brought down the river by means of the imperfect navigation then existing. The beautiful columns of the Old Hall of Representatives still stand to testify to the good taste and judgment of his choice. This marble, being composed of pebbles of various sizes and colors, held together only by a natural cement,

required great care in dressing; and being entirely unfit for the delicate carving of the capitals and bases, these were sculptured from white Italian marble. After eight years of energetic labor, the Old North and South Wings were finished by Mr. Latrobe in 1811, and the plans and preparations to build the central section approached completion in 1812, when the appropriations for prosecuting the work were curtailed by the threatened war. It advanced slowly to the actual breaking out of hostilities, and was then wholly suspended until the restoration of peace in 1815. Meanwhile he removed to Pittsburg, where, during the years 1813 and 1814, he was engaged in superintending the construction of steamboats in connection with Fulton, Livingston, and Roosevelt, the last of whom, his son-in-law, making the first voyage ever made by steam upon the Western rivers, going from Pittsburg to New Orleans in a steamboat built under Latrobe's direction at the former place.

Upon the proclamation of peace, Mr. Latrobe was recalled to Washington by President Madison, to undertake the rebuilding of the Capitol, which the British had endeavored to totally destroy. His account of the state in which he found the building is most interesting. To use his own words, "the appearance of the ruins was perfectly terrifying." In the halls supported by columns, the fire had eaten into and around the stone composing them, so that a few inches only of contact was in some columns left. Sawed and hewed timber was not readily to be had, and, as a novel expedient, cord-wood piled closely from floor to ceiling was used to make it safe for the workmen to take down the pillars and entablature. He says, however, that many important parts of the Capitol were wholly uninjured. The picturesque entrance of the House of Representatives, the corn capitals of the Senate vestibule, the great staircase, and the vaults of the Senate Chamber were entirely free from any injury which could not be easily repaired. Some of the committee rooms of the South Wing were not even soiled, but in general the woodwork was burnt in patches. The British were the whole night setting fire separately to every door and window with the inflammable composition of their rockets. Chairs, desks, and other combustible materials were collected into the Supreme Court room, in order that the destruction of this hall of justice, where John Marshall sat, might be complete.

Mr. Latrobe proceeded energetically with the work of restoration, and made such progress as the appropriations would allow, during the next two years. The sandstone columns injured by the fire were replaced by the Potomac marble pillars, and in the progress

of reconstruction other details to give greater strength and durability were changed, but no serious modifications of previous plans were made.

Prior to the war the architect had been intrusted, as Surveyor of Public Buildings, with the entire conduct of the work on the Capitol, and the disbursement of the funds, subject only to the control of the President. This system was altered, and a Board of Commissioners of the Public Works appointed, under whose general direction the architect was to perform his duties. With the gentlemen who filled these offices during President Madison's term, Mr. Latrobe was in the most agreeable relations, as their confidence in him was unlimited. On the accession of President Monroe, a single Commissioner under a new act of Congress took the place of the previous board, and thenceforth the architect was brought in a great measure under his individual control. The officer appointed to this post by President Monroe was entirely ignorant of architecture, and unfitted for the direction of work requiring the highest grade of professional skill for its successful conduct. Not entertaining, however, this view of his own capabilities, he soon manifested a disposition to interfere with the plans of the architect and his manner of carrying them into execution. Differences consequently arose, and Mr. Latrobe, being a man of high and sensitive spirit, fully appreciating the responsibilities of his position, involving as they did his professional character as well as his personal independence, found himself unable to submit to the dictation of one who, while his official superior, was his inferior in the knowledge and skill which his duties required. His connection with the Capitol, therefore, ceased in November, 1817. To Mr. Latrobe belongs the honor of having planned, built, and rebuilt the Old South Wing, of having rebuilt the Old North Wing, and of having designed the Rotunda and the center structure. He designed and constructed the Old Hall of Representatives, and reconstructed the Old Senate Chamber and Supreme Court room, with their lobbies and vestibules. That exquisite work of art, the allegorical figure of History in the Car of Time, recording the acts of the legislative body of the nation, placed over the entrance of the Old Hall, is also his design. The Rotunda, Old Library, and other parts unfinished at the time of his retirement, were completed by his successor, Mr. Bulfinch, whose Dome, which was much higher than the one proposed by Mr. Latrobe, has been since replaced by the still loftier one of Mr. Walter.

Mr. Latrobe went to Baltimore, where he completed the Com-

mercial Exchange, now the United States Post Office and Custom House, and the Roman Catholic Cathedral, both fine examples of his genius and skill. He removed in 1820 to New Orleans, to complete works for the supply of that city with water, commenced by his eldest son, and was cut off in September of that year, three years after that son had fallen a victim to the same epidemic of which the father died. Thus ended the career of a man as distinguished for his virtues as for his genius, who lived too early in the history of the nation for the fullest display of his great gifts and most varied accomplishments. He was a man of great learning in his profession and outside of it, and illustrated the highest type of manhood produced by his age.

### CHARLES BULFINCH.

Charles Bulfinch was architect of the Capitol from 1817 until 1830. He was born in Boston, in 1763, and graduated at Harvard University, 1781. At twenty-one he visited Europe, and devoted a year to the study of ancient and mediæval architecture. Upon his return he applied himself to the improvement of the wretched architecture of Boston. In 1793 he designed and built the first theater erected in his native city. From 1795 to 1798 he was engaged in the construction of the State House, a building still admired for its architectural merits. He designed and constructed other buildings and churches, to the number of forty or more, in Boston and vicinity, among which were the Faneuil Hall Building, which he enlarged to four times its original size, the Court Houses at Boston and Worcester, the University Hall at Cambridge and Chapel at Andover, the General Hospital and New North and New South Churches in Boston, and the State House of Maine at Augusta.

When Bulfinch succeeded Latrobe as architect of the Capitol, the work of rebuilding the Old Wings, which had been pushed energetically for two years, was almost finished. The destruction of the Capitol by the British had caused no material change in its plan, but the vault of the Court Room, the Hall of Representatives, and Senate Chamber had been enlarged, and stone and iron substituted for brick and wood, so that the structure was made much stronger and more durable. He first addressed himself to the work of completing the Wings, according to the designs already adopted. In his report of February, 1818, he says: "The public rooms of Congress will be very splendid, and exhibit favorable specimens of correct taste and of the progress of the arts in our country." By act of

April 20th, 1818, $100,000 were appropriated to build the central portion of the Capitol. All that part of the building now covered by the Congressional Library, Rotunda, and central Porticos was at this time a mass of earth, rubbish, and old foundation. The old foundations of the basement story were broadened, and the ground floor strengthened with arches. The general plans of his predecessors were followed, except in the western projection of the center, which was constructed after a plan of his own. Latrobe designed the Rotunda, but its execution was the work of Bulfinch, after drawings by himself. This noble hall is thus described by its architect:

"In the Rotunda a bold simplicity has been studied, suitable to a great central entrance and passage to more richly finished apartments. This room is ninety-six feet in diameter, and of the same height; its walls are divided into twelve compartments by stone pilasters, or Grecian antæ; four of these compartments are occupied by doors, and the others by panels to receive paintings. The antæ support a Grecian entablature decorated with Isthmian wreaths in the frieze, apparently in honor of the subjects of national history to be exhibited below."

The artistic taste of Mr. Bulfinch was conspicuously shown in his arrangement to remedy a mistake in the location of the building, it having been placed too far west, so as to overhang the brow of Capitol Hill, instead of resting upon its level summit. The Western Front thus exhibiting a story lower than the Eastern, he covered this exposed basement with the beautiful semicircular glacis and sloping terraces which render the western approach grand and striking in the highest degree. The Old Capitol being completed in 1830, Mr. Bulfinch returned to Boston, where he died in 1844.

An unfriendly English critic, Mrs. Trollope, writing the year following its completion, says that "the beauty and majesty of the American Capitol might defy an abler pen than mine to do it justice." She is "struck with admiration and surprise at seeing so imposing a structure on this side of the Atlantic," speaks of the "magnificent Rotunda, a noble hall of an imposing loftiness," of the "magnificent western façade," of the "elegant eastern front," of the Capitol "standing so finely, high and alone, an object of imposing beauty to the whole country adjacent."

### THOMAS U. WALTER.

The Old Capitol, when Bulfinch left it in 1830, was a completed building. It remained unchanged until the services of that eminent architect, Thomas U. Walter, were called into requisition in 1851. During the twenty years that had elapsed, there was one attempt only

to enlarge the structure. In 1843, Daniel D. Barnard, a member of the House of Representatives from New York, secured the passage of a resolution concurred in by the Senate:

"That the Secretary of War be requested to cause a plan and estimates to be prepared at the Topographical Bureau, or otherwise within his Department, and laid before Congress at its next session, for a room or apartment in the Capitol, or to be added thereto, for the better accommodation of the sittings of the House of Representatives."

In accordance with this resolution, plans and estimates were prepared by Colonel Abert and Lieutenant Humphries of the Topographical Bureau, and William Strickland, architect, having in view the enlargement of the Capitol by means of a South Wing, extending southward one hundred and three and a half feet, with a breadth of one hundred and fifty-two and a half feet from east to west. No further action was taken by Congress on his resolution. The first public record of a proposal to extend the Capitol by means of North and South Wings is found in a letter from Jefferson Davis, then a member of the Senate Committee of Public Buildings, to Robert Mills, architect, dated April 3d, 1850. Mr. Mills replied to this letter, May 1st, in the form of a report in favor of the extension of the Capitol by wings, submitting at the same time designs and drawings for new wings and a new dome. The Senate Committee on Public Buildings, R. M. T. Hunter chairman, reported, May 28th, 1850, a plan for the extension of the Capitol, originally suggested by the Topographical Bureau, but materially altered by Robert Mills, whose letter to Mr. Davis they incorporated in their report. On September 19th of the same year, the Senate passed a joint resolution providing for the extension of the Capitol by wings, according to such plans as may be adopted by the joint committee of both Houses of Congress, appropriating $100,000 for each wing. The House reduced the appropriation to $100,000 for both wings, and changed the language of the resolution so that the plans were to be prepared by an architect appointed by the President, and submitted to him for approval. This change undoubtedly signified the substitution of Thomas U. Walter as architect for Robert Mills, the former being known as the choice of President Fillmore, the latter as the favorite of Senator Davis. Prior to any further action by the House, and in response to an advertisement of the Senate Committee for plans, dated September 30th, the subsequently accepted design and drawing for the magnificent new wings were made by Mr. Walter, and submitted in a letter dated November 21st, 1850.

In this communication the distinguished architect submits two plans for the enlargement of the Capitol, expressing a preference for the one consisting of an addition of one hundred and eighty-seven feet at each end of the old building, with hexastyle porticos on each wing, of proportions corresponding to those of the centre building. He suggests that the exterior and interior be of that imperishable material white marble, and that the old freestone structure be painted and shaded to correspond with the wings in appearance. He expressed the opinion that it would not be impracticable to remove the facing of the old building and substitute marble, so that we might have a marble Capitol that will stand the test of time. Mr. Walter was appointed architect of the Capitol extension early in 1851. His general designs were approved by the President, June 10th, and the corner-stone of the New South Wing laid with appropriate ceremonies, July 4th, Daniel Webster delivering one of his great orations on the occasion. Before the close of the year, the foundations of both wings were laid to the depth of from fifteen to forty feet, and the basement story finished. December 21st, 1851, the Western Front of the center building was destroyed by fire, and in the following June the present Congressional Library was begun by Mr. Walter upon original designs and drawings made by him. It is the first room constructed entirely of iron, the rafters, gallery floors, piers, alcoves, columns, doors, stairways, shelving, and ceilings being all of the same enduring material. For durability and beauty of design this is probably the finest library room in the world.

At the close of 1854, the walls of the Senate and Representative Halls had reached the height of the ceilings. In 1855, the old brick and wooden Dome was removed, and the materials for the new iron Dome put in process of preparation. The designs for this most graceful and most symmetrical Dome had already been made by Mr. Walter, and had been approved by the President. Both Wings were covered with metallic or glass roofing in 1856, and the cast-iron ceilings of the House and Senate Chambers were completed. The columns of the corridors and vestibules, and the larger part of the entablatures, were also set. The greater portion of the interior, including the Hall of Representatives, was finished in 1857, and the House first met in the New Hall December 16th of that year. On the 4th of January, 1859, the New Senate Chamber was occupied by the Senate. In 1861, the main body of the Wings was completed. The Government ordered the work to be suspended in May, 1861, but through the patriotism and faith of the contractors, who continued

placing the iron castings upon the Dome at their own expense and risk, the sound of the hammer upon the Capitol did not cease during a day of the civil war. During 1863, the outside spherical portion of the great Dome was completed, and on December 2d of that year, Crawford's Statue of Freedom was raised to crown it, and saluted with four hundred and fifty-five guns fired from the surrounding forts. In the words of the proud architect, "the effect was thrilling and grateful to every loyal heart." In 1864, the Eastern Portico of the North Wing was finished, in a style of marble work that has probably never been surpassed.

The close of the year found the exterior of the iron Dome painted and the scaffolding removed. During 1865, both Wings, with their six chaste and beautiful porticos, two magnificent entrances, and four grand stairways, were substantially completed, the interior of the Dome finished, and Mr. Walter's work was done. The great architect surrendered his office with its exacting labors and harassing responsibilities into the hands of his talented and accomplished pupil, Edward Clark, and retired to his home in Germantown, Pennsylvania, where he now lives.

Thomas U. Walter was born in Philadelphia, September 4th, 1804. His paternal grandfather was a German, his grandmother a Pennsylvanian of English parentage, and his father a Philadelphian. Early in life he exhibited a taste for architecture, and gave promise of future distinction in the arts of design and construction. His education was liberal though not collegiate. In 1819 he entered the office of William Strickland as a student of architecture, with whom he remained two years. The next seven years of his life were devoted to mathematical studies, to drawing and painting, and to acquiring a practical knowledge of the branches of mechanical art connected with building. In 1828 he again became a pupil of Mr. Strickland, under whose instructions he remained two more years, devoting his attention exclusively to the study of architecture, the practice of which he commenced in 1830. The following year he designed and executed the Philadelphia County Prison, his first important work. His designs for Girard College in Philadelphia were adopted by the City Council in 1833, and the buildings, the erection of which occupied fourteen years, were constructed throughout under his direction. He designed and executed many public and private buildings in his native city and throughout the country. In 1851 his plans for the extension of the United States Capitol were adopted, and the appointment of architect of the work was conferred

upon him by the President of the United States. He held that appointment fourteen years, during which time, in addition to the work of the Capitol extension, he planned and executed the iron Dome of the Capitol, the Congressional Library, the East and West Wings of the Patent Office and the extension of the General Post Office. He also designed the new Treasury Building and the Government Hospital for the Insane. In 1849, Mr. Walter received the honorary degree of Master of Arts from Madison University, N. Y.; in 1853, that of Doctor of Philosophy from the University of Pennsylvania; and in 1857, the degree of Doctor of Laws from Harvard University. He held a professorship of architecture in the Franklin Institute of Pennsylvania, and has delivered many able and popular lectures on his art, in the Hall of the Institute and elsewhere. He is a member of the American Philosophical Society, and of many other literary and scientific institutions. Having retired from the active practice of his profession, Mr. Walter is now devoting his time to scientific and literary pursuits, and to the advancement of art in his native city.

We have traced the history of the construction of the United States Capitol, and made known its architects. To describe in detail the completed edifice, and to point out its defects, would carry us beyond the limits of this Article. The inexcusably bad taste of some of the paintings, and interior, and especially exterior sculptures, borders almost on barbarism. We may also express a passing regret that the central part of the building had not been broadened and elevated to receive its new Dome. Had the main Front been changed to the opposite side, so as to be approached as we ascend the eminence crowned by the edifice, it would have presented a more commanding and majestic appearance. And yet, with all its minor faults, the Capitol at Washington is a structure worthy of the Republic.

From what we have written, it appears that its chief architects were Latrobe and Walter; the one described by the accomplished artist, Robert Mills, as "a gentleman of transcendent talents, of high scientific attainments, and perfectly master of his profession;" the other, judged by his works, one of the first architects now living, and worthy to rank among the eminent of his profession in past ages. It would be a fitting honor from our Republic to place the statues of these two distinguished men near the portals of the beautiful and magnificent structure which their genius and labors have reared.

ARTICLE III.

# THE IRON RESOURCES OF THE UNITED STATES.

PROF. J. S. NEWBERRY.

AMONG the varied mineral resources of the United States, the ores of iron form a conspicuous feature. All the varieties of ore known are found here, most of them in abundance, and so located with reference to the fuel necessary for their manufacture, as to make cheap and excellent iron attainable in all important centers of population. In order to show the conditions under which the manufacture of iron is now and will hereafter be carried on in our country, it will be necessary to give some notes on the varieties of ore which we possess, and on their distribution and adaptation to different kinds of manufacture.

## MAGNETIC IRON ORE.

The richest of all the ores of iron is the magnetic oxide, which, when pure, contains iron 72.4, oxygen 27.6. It is usually crystalline in character, and may be recognized by its black color and its effects upon the magnet. When free from injurious ingredients, it produces the best of iron, and is already the basis of a large iron industry in this country. It is, however, liable to be contaminated by phosphorus, sulphur, and titanium. The phosphorus is usually in the form of apatite (phosphate of lime), and this, when present in considerable quantities, renders iron made from the ore "cold short," that is, hard and brittle when cold, and forbids its use for the manufacture of steel.

Sulphur exists in magnetite in the form of sulphide (iron pyrites). The effect of this is to render the iron "red short," or tender and crumbling when heated to red or white heat. This also greatly impairs its value for the manufacture of steel, though by proper treatment it may be almost entirely removed. In this respect sulphur differs from phosphorus, as the latter clings to the iron with a

tenacity that it is almost impossible to overcome. Titanium renders iron ore refractory in the furnace, and causes the metal to be excessively hard if combined with it in any considerable quantity.

The magnetic ores of the United States are found only in the metamorphic and crystalline rocks, the great repositories of it existing in Canada, the Adirondacks, and throughout the entire length of the Alleghany belt. They are also found in the Black Hills, and in various parts of the Rocky Mountains and the Sierra Nevada. The magnetites of Canada occur in the Laurentian rocks, where it is evident that they once formed sedimentary sheets which were deposited nearly horizontally, but are now greatly broken up and sometimes are seen standing nearly on edge and having the aspect of true veins. The value of the Canadian ores is generally much impaired by the sulphur and titanium which they contain. Some of these Canadian ore-beds are more than one hundred feet in thickness, and of considerable lateral extent; such as the "Big Bed" of Marmora, north of Lake Ontario, and that of the Bay of St. Paul's described by Sir William Logan.

From several Canadian localities magnetic ore is carried through the Welland Canal to the cities located on the shores of the Great Lakes, and especially to those of Ohio and Pennsylvania. Transportation to these localities, by vessels returning from the East light, is cheap, and it is probable that hereafter a very important contribution to the iron industry of the West will be made from this source. The principal Canadian ores now brought to the United States are the ore of Marmora, shipped from Coburg, Lake Ontario, and that of North Crosby on the Rideau Canal. The use of the latter is restricted on account of the quantity of titanium it contains.

The magnetic ores of the Adirondacks are best shown about Port Henry on Lake Champlain, in a region which is sometimes called the Champlain Iron District. Here the number of important deposits is large; the ore is generally granular in texture, and is often contaminated by phosphate of lime. A portion of it is, however, quite pure, and the quantity used in and shipped from this region is now very great. Some of it is sent even to the Western States, where it is used largely as "fixing" in the puddling furnaces, and also more sparingly in the blast furnaces in combination with other ores, under the impression that it corrects a tendency to "red shortness" and improves the quality of the iron. Its chief place of manufacture is in the interval between Lake Champlain and New York.

In Orange County, New York, and in Northern New Jersey, the magnetic ores of the Alleghany belt exhibit unusual development. Here they are found interstratified with gneiss and mica-schist, having the bearing of the mountain ranges—nearly northeast and southwest—with a dip of sixty to seventy degrees to the southeast. The number of distinct beds of iron ore in this region is great, and they furnish the chief supply of ore to more than one hundred furnaces.

In Sussex County, N. J., a remarkable bed of magnetite is found, which contains large quantities of manganese and zinc, and this forms the mineral known as franklinite. This is the basis of an extensive manufacture of zinc, and when the zinc has been removed from the ore, the residual iron is found to be unusually free from injurious ingredients. It also contains from ten to twenty per cent. of manganese, and is thus well adapted to the manufacture of *spiegeleisen*. It is in fact largely used for this purpose, and now supplies to our Bessemer steel works considerable quantities of this indispensable article scarcely inferior in quality to that imported from abroad. We are informed by Mr. A. S. Hewitt that on the western side of this ore-belt the magnetite is much more free from phosphorus than on the eastern, and that here a large amount of ore has been found sufficiently free from phosphorus to be well adapted to the manufacture of steel.

In Pennsylvania the belt of magnetic ore is less rich than either north or south, but valuable deposits occur at frequent intervals.

At Cornwall is a peculiar deposit of magnetic ore, which is quite exceptional in character, and of more economic importance than almost any other iron mine in the country. Here the iron ore accompanies the trap-rock, which has apparently burst out along the line of junction between the Triassic sandstone and the metamorphic rocks. The ore is soft, and sometimes pulverulent in character, and is often highly impregnated with sulphur and copper; still, nearly two hundred thousand tons per annum are produced from this mine.

In York County, Pennsylvania, another peculiar magnetite is found, which is known as the Codorus ore. This is a mica-schist containing from thirty to forty per cent. of magnetic oxide of iron, of great purity, and it has become somewhat famous by its use in a peculiar process for the manufacture of what is called silicon steel, which consists simply in the mingling of the pulverized ore with cast iron which contains three to four per cent. of carbon, and thus by

oxidation reducing the percentage of carbon until it reaches the standard of a low steel.

In Virginia, North Carolina, and Georgia, magnetic ores exist in great abundance, though up to the present time they have been but sparingly manufactured. One of these beds in Western North Carolina, called the Cranberry Iron Mine, is said to form a remarkably extensive and rich deposit. It is nearly free from sulphur and phosphorus, and is evidently capable of supplying a very large amount of iron of the best quality. So great is the development of the magnetic ores in this region, that it seems almost certain to become one of the most important centers of iron industry.

ANALYSES OF MAGNETIC IRON ORES.

| | Moriah, N. Y. | Peekskill, N. Y. | Pt. Oram, N. J. | Franklinite, N. J. | Codorus, Penn. | Cranberry N. C. | Stirling, N. Y. |
|---|---|---|---|---|---|---|---|
| Protoxide of Iron... | 88.827 | 23.395 | 73.20 | .... | 53.92 | 91.89 | 86.091 |
| Peroxide of Iron.... | | 57.656 | | 65.05 | | | |
| Oxide of Manganese... | trace. | 0.011 | 0.50 | 14.77 | 0.10 | 0.32 | 0.110 |
| " Cobalt..... | .... | .... | .... | .... | .... | .... | 0.015 |
| " Zinc..... | .... | .... | .... | 23.30 | .... | .... | .... |
| Alumina..... | 1.388 | 0.014 | 4.40 | .... | 7.04 | 1.03 | 3.228 |
| Lime..... | 2.111 | 0.618 | 1.56 | .... | 0.88 | 1.06 | 3.416 |
| Magnesia..... | 0.198 | .... | 1.59 | .... | 0.76 | 0.23 | 0.940 |
| Sulphur..... | 0.002 | 1.502 | 0.11 | .... | 0.16 | 0.25 | 0.206 |
| Phosphorus..... | .... | 0.052 | .... | .... | .... | trace. | 1.650 |
| Phosphoric Acid..... | 0.040 | .... | 0.38 | .... | 0.13 | .... | .... |
| Silica..... | 6.443 | 17.600 | 11.63 | 0.30 | 35.65 | 4.02 | 5.432 |
| Titanic Acid..... | 0.991 | .... | .... | .... | .... | .... | .... |
| Water..... | .... | .... | 6.58 | .... | 1.30 | 1.15 | .... |
| | 100.00 | .... | 99.95 | 103.42 | .... | 99.95 | .... |
| Metallic Iron..... | 64.31 | 58.318 | 53.00 | 45.53 | 37.74 | 66.52 | 62.408 |
| Phosphorus..... | 0.022 | 0.052 | 0.20 | .... | 0.07 | trace. | 0.723 |
| Sulphur..... | 0.002 | 1.502 | 0.11 | .... | 0.16 | 0.25 | 0.206 |

## THE HEMATITE ORES.

Hematite, or specular iron, like magnetite is found only in crystalline rocks. When pure it is composed exclusively of the peroxide of iron, contains seventy per cent. of metallic iron, and hence is second in richness only to magnetite. This is the ore found in the famous mines of Elba, and has been extensively employed for the manufacture of iron in many parts of the world. The deposits of this ore which occur in the United States are second to none in quality and quantity. The most important of these are found in the

iron region of Marquette, Michigan, and in that of Central Missouri. The geological age of these districts is apparently the same, viz. Huronian. On Lake Superior it is now easy to see that the ore-beds were once horizontal strata, deposited in conformity with many other stratified sediments, but they are folded and broken in such a way that their true nature was for a long while misunderstood. Like the magnetic ores of the Alleghany belt, they were once considered eruptive, but the progress of modern science has shown that all the so-called Eozoic iron ores are simply metamorphosed strata, once deposited horizontally like the sheets of iron ore now found in the unchanged Palæozoic rocks—such as the Clinton ore and the "black-band" and "clay ironstone" of the Coal Measures.

The deposits of iron near Marquette, Michigan, are irregularly scattered over an area of about one hundred and twenty miles long from east to west—in other words, are coextensive with the Huronian formation. The isolated nature of the deposits is dependent upon the immense surface erosion which this region has suffered. This has removed by far the greatest part of the ore that originally existed here; leaving it only where it formed masses of unusual magnitude and solidity, which have resisted the erosive action, or where, in synclinal troughs, it has been beyond the reach of the glaciers which have ground off all the more elevated portions. We give below a number of analyses of Lake Superior iron ore.

| | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. |
|---|---|---|---|---|---|---|---|---|
| Peroxide of Iron..... | 93.75 | 88.50 | 86.70 | 79.80 | 72.00 | 90.00 | 89.21 | 91.06 |
| Oxide of Manganese.. | trace. | trace. | trace. | 0.10 | trace. | trace. | trace. | 0.23 |
| Alumina..... | 0.73 | 1.84 | 1.64 | 2.05 | 0.92 | 1.87 | 2.67 | 0.85 |
| Lime ..... | 0.61 | 0.89 | 0.57 | 0.45 | 0.33 | 1.20 | 0.67 | 0.92 |
| Magnesia..... | 0.23 | 0.75 | 0.24 | 0.53 | 0.34 | 1.60 | 0.19 | 0.77 |
| Sulphur..... | 0.03 | 0.01 | 0.02 | 0.03 | 0.02 | 0.03 | 0.35 | 0.03 |
| Phosphoric Acid..... | 0.32 | 0.46 | 0.14 | 0.30 | 0.08 | 0.57 | trace. | 0.25 |
| Silica..... | 3.27 | 6.40 | 9.82 | 12.52 | 25.09 | 4.72 | 6.25 | 5.13 |
| Water..... | 1.09 | 1.23 | 0.61 | 4.25 | 1.21 | 0.98 | .... | 0.66 |
| Total..... | 100.03 | 100.08 | 99.74 | 100.03 | 99.99 | 99.97 | 99.37 | 99.90 |
| Metallic Iron..... | 65.62 | 61.95 | 60.69 | 55.86 | 50.40 | 63.00 | 64.60 | 65.94 |
| Phosphorus..... | 0.14 | 0.20 | 0.06 | 0.13 | 0.03 | 0.22 | .... | 0.11 |
| Sulphur..... | 0.03 | 0.01 | 0.02 | 0.03 | 0.02 | 0.03 | 0.35 | 0.03 |
| Specific gravity..... | .... | 4.64 | 4.55 | 4.12 | 3.97 | 4.64 | .... | 4.66 |

1. Jackson Mine.
2. Cleveland Mine.
3. Lake Superior Mine (Specular).
4. Lake Superior Hematite.
5. Lake Angeline (Specular Jaspery).
6. New York Mine.
7. Spar Mountain (Magnetic)
8. Washington Mine (Magnetic).

From the above analyses it will be seen that the iron ores of Lake Superior vary considerably in richness: they also differ widely in the constituents which are associated with the iron in them. While the great mass of the Lake Superior iron is typical specular ore, there is in this district a considerable quantity of magnetic iron and a sufficient amount of hydrated sesquioxide to form an important item in the ore production. There are also here some manganiferous ores which are apparently well adapted to the manufacture of spiegeleisen. As a whole, the ores of Lake Superior are characterized by the presence of a very considerable quantity of silica, and by the relatively small amounts of sulphur and phosphorus which they contain. They are, therefore, well adapted to the manufacture of Bessemer steel, and are already largely consumed for that purpose.

The annual production of the Lake Superior iron mines for the ten years preceding 1873 has been, according to Major Brooks, as follows:

| | |
|---|---|
| 1863 | 205,055 tons. |
| 1864 | 243,157 " |
| 1865 | 187,106 " |
| 1866 | 288,806 " |
| 1867 | 457,642 " |
| 1868 | 510,522 " |
| 1869 | 629,532 " |
| 1870 | 861,405 " |
| 1871 | 813,379 " |
| 1872 | 952,077 " |

Most of this ore was shipped from Marquette, but a considerable quantity finds its outlet by the Escanaba and Ontanagan Railroad to Green Bay and Lake Michigan. Two-thirds of the ore exported from this district goes to Cleveland, Ohio, there to be distributed among the two hundred furnaces which use it in Ohio and Pennsylvania.

The iron district of Central Missouri has been cited as one of the wonders of the world, for here it has been said that there are literally mountains of iron ore. These mountains are named Pilot Knob, Iron Mountain, etc., of which Pilot Knob has an altitude of over six hundred feet. These and the associated hills are not, as was formerly supposed, entirely made up of iron ore, but the quantity is so enormously large that the term "inexhaustible" frequently applied to it is scarcely an exaggeration. The ores of this region,

like those of Lake Superior, are mostly specular, and are very rich and pure. Those of Iron Mountain are richest, as will be seen from the table of analysis given below. Here the ore occurs disseminated in an irregular way through masses of porphyry, which were, in all probability, once sedimentary rocks, but which have been so highly heated as to resemble the products of complete fusion. This process has resulted in the destruction of all lines of bedding, and the breaking up of the regularity and continuity of the ore-beds. In process of time the porphyry, which includes the ore at Iron Mountain, has been deeply and extensively decomposed by atmospheric action, and reduced at the surface to a red clay, so that most of the iron hitherto taken from this mountain has been found as detached masses in this bed of clay. It is well known, however, that underneath this, immense quantities of iron are lying imbedded in the unchanged porphyry. At Pilot Knob the ore is distinctly stratified; in some places being quite slaty. It contains a larger amount of silica and alumina than that of Iron Mountain, and shows clearly its sedimentary nature by its structure. Though mined with considerable difficulty, from its intense hardness and toughness, and yielding a smaller percentage of metallic iron than that of Iron Mountain, Pilot Knob ore is still highly esteemed, and, like that of Iron Mountain, is shipped to furnaces even as far east as Pittsburgh.

Taking the ore of the different mines of Central Missouri together, its average richness is about the same with that of Lake Superior. It is also equally free from injurious ingredients, and is capable of being successfully employed for the manufacture of all varieties of iron and steel. In these two iron districts the inhabitants of the Valley of the Mississippi have a supply of remarkably rich and pure ores, which is not likely to be exhausted for some hundreds of years, and which, from the small amount of phosphorus which they contain, will be the chief dependence of the American people for the manufacture of steel, unless improvements in the processes of manufacture shall make it possible to utilize the ores which are now regarded too impure for the purpose. The geological age of the Lake Superior and Missouri iron ores is apparently the same, and they are also probably contained in the same formation with the famous Swedish ores, which they so clearly imitate in appearance and composition.

ANALYSES OF MISSOURI SPECULAR IRON ORES.

| | Iron Mountain. | | Pilot Knob. | | Shepherd Mountain. |
|---|---|---|---|---|---|
| Protoxide of Iron | .... | ..... | 0.15 | 1.67 | 1.80 |
| Peroxide of Iron | 93.57 | 95.42 | 84.33 | 90.87 | 94.84 |
| Proto-sesquioxide of Iron | 0.76 | 0.88 | .... | .... | .... |
| Alumina | 0.08 | 0.06 | 0.75 | 0.53 | .... |
| Lime | 0.46 | 0.32 | 0.21 | 1.76 | .... |
| Magnesia | .... | .... | 0.14 | 0.13 | .... |
| Sulphur | trace. | trace. | trace. | 0.078 | 0.00 |
| Phosphoric Acid | 0.035 | 0.036 | 0.035 | 0.069 | 0.025 |
| Silica | 4.75 | 3.02 | 13.27 | 5.18 | 4.05 |
| Manganese | 0.12 | 0.07 | .... | .... | .... |
| Alumina, with trace of Iron | .... | .... | 1.44 | 0.36 | .... |
| Total | 99.775 | 99.806 | 100.365 | 100.677 | 100.715 |
| Metallic Iron | 66.049 | 67.416 | 59.15 | 64.91 | 66.52 |
| Sulphur | trace. | trace. | trace. | 0.078 | 0.00 |
| Phosphorus | 0.016 | 0.016 | 0.015 | 0.041 | 0.011 |

RED HEMATITE ORE.

This is the name given to all ores which consist mainly of the peroxide of iron and give a red streak or powder, but it is more properly applied to those that have a granular or concretionary structure, and have not a crystalline, metallic, or specular appearance. The ores included in this definition are of more modern date than the Eozoic, and have been plainly derived from limonite by the loss of the combined water. The famous Cumberland ore of England is a typical example of this variety. This was once a hydrated sesquioxide deposited from water in concretionary masses, and having a fibrous, radiated structure. Similar ore is found in various parts of the world, wherever indeed a limonite has been subjected to metamorphic action by which its water is removed. We have very little of this particular variety of red hematite in the United States, though some of it is found filling what were once crevices and cavities in the ore-beds of Lake Superior. The chief variety of red hematite in this country is what is known as the "Clinton" or "Fossil ore."

This is a remarkable deposit of ore found in the Clinton group of the Upper Silurian, and extending along the outcrop of this formation from Northern Wisconsin through a portion of Canada, entering New York on the shore of Lake Ontario, east of the mouth of the Genesee, running thence southeasterly through Clinton, Madison County—where it received its name, and is extensively worked—thence south through Blair County, and Broad Top, Penn-

sylvania, and so on to East Tennessee and Georgia, where it passes under the more recent formations, and disappears. This is a stratified deposit varying from one to ten or more feet in thickness, generally oölitic or granular, sometimes very compact; at others capable of being excavated by the shovel, and called "Flaxseed ore." Its composition is indicated in the analyses given below, which may be accepted as expressing its average composition, and the range of its variation. The mode of formation of this singular deposit of ore has not been well explained, but we venture to offer a suggestion in regard to its origin, which will, we think, satisfy most of the conditions of the problem. On examination with the microscope, the granules which compose the Clinton ore are found to be concretions. The deposit evidently accumulated at the bottom of water in the presence of a large amount of animal life, from which its organic remains and large percentage of phosphorus have been derived. From these facts we see that it must have been formed as a hydrated sesquioxide, and gathered as bog ore is now accumulating, acting as a carrier of oxygen to the carbon of organic matter, until that was all exhausted, then taking its place. In some of the Swedish lakes, deposits of granular limonite are now constantly forming, and from time to time they are gathered as crops are harvested. This ore is in the form of minute concretions, of nearly uniform size, resembling small shot, and having the structure and composition of the Clinton ore, except that in the latter the spherules are flattened by compression, and the combined water has been generally eliminated, as in other limonites of ancient date. Hence we may infer that the Clinton ore accumulated in a belt along the shore of an arm or bay of the Upper Silurian sea, where this sea received the drainage of a semicircle of highlands composed of the Alleghany belt, the Adirondacks, the Canadian Eozoic mountains, and the Lake Superior Huronian area. Every part of this belt contains great deposits of iron ore, and hence the water flowing from it could hardly fail to be highly ferruginous.

In Maine we have seen a laminated, metamorphosed red hematite, which presents the appearance the Clinton ore would have if rendered by metamorphism more schistose and crystalline; and like the Clinton ore, this contains an unusual percentage of phosphoric acid. This ore is said to form a belt, which extends a hundred miles through the mountains of Maine; and we have thought it might be the Clinton ore on the east side of the old Eozoic axis metamorphosed as all the Palæozoic rocks have been in New England.

From the amount of phosphorus which the Clinton ore contains it is worthless for the manufacture of steel, but the iron made from it is well adapted to most uses, whether as bar or cast iron, and it is now the chief dependence of a great number of furnaces in New York, Pennsylvania, Tennessee, and Georgia. As over wide areas this is a continuous sheet of ore, the quantity of iron which the Clinton formation is capable of furnishing is almost incalculable; and in point of commercial and industrial importance it is doubtful whether it should yield to any of the other iron ores enumerated in this paper. In East Tennessee, where the Clinton ore has conspicuous development, it is often called the "Dye-stone ore," since it is sometimes used by the country people to impart a red tint to their clothing.

ANALYSES OF RED HEMATITE IRON ORES.

| | Rossie, N. Y. | E. Tenn. | Clinton Ore. | | | | |
|---|---|---|---|---|---|---|---|
| | | | Wisconsin. | Iron Ridge Wisc'nsin. | E. Tenn. | S. Penn. | Wayne Co., N. Y. |
| Peroxide of Iron | 83.89 | 94.71 | 71.26 | 81.35 | 81.26 | 57.54 | 63.31 |
| Oxide of Manganese | .... | .... | .... | 0.47 | trace. | .... | .... |
| Alumina | 1.32 | 1.39 | 4.80 | 2.80 | 3.40 | 5.48 | .... |
| Lime | .... | 0.13 | 4.17 | 2.28 | 1.60 | 1.05 | *6.03 |
| Magnesia | 1.60 | 1.21 | 0.97 | 0.99 | 0.50 | 0.52 | .... |
| Sulphur | .... | 0.14 | 0.10 | 0.06 | trace. | 0.01 | .... |
| Phosphorus | .... | 0.34 | .... | 0.48 | .... | .... | 0.43 |
| Phosphoric Acid | .... | .... | 3.23 | .... | 1.45 | 1.55 | .... |
| Silica | 13.20 | 1.80 | 5.39 | 4.32 | 6.50 | 29.99 | .... |
| Moisture | .... | .... | 9.85 | 6.30 | 4.00 | 3.80 | .... |
| Carbonic Acid | .... | .... | .... | .... | 1.50 | .... | .... |
| Total | 100.01 | 99.72 | 100.77 | 99.05 | 100.21 | 99.94 | .... |
| Metallic Iron | 58.72 | 66.30 | 49.90 | 56.44 | 56.88 | 39.90 | 44.31 |
| Sulphur | .... | 0.14 | 0.10 | 0.06 | trace. | 0.01 | .... |
| Phosphorus | .... | 0.34 | 1.74 | 0.48 | 0.633 | 0.68 | 0.43 |

*Limonite* or *brown hematite* is apparently found in all portions of the world, and it constitutes an important element in the manufacture of iron in all iron-producing countries. As much misapprehension exists with regard to the nature and origin of the deposits of brown hematite, we give here a brief synopsis of their characteristics, which it will be important for all those who are interested in such matters to bear in mind. As is known, limonite is called brown hematite because it has a brown color and a brownish streak or powder, and is thus distinguishable from red hematite. Aside

from its earthy matter it contains about fourteen per cent. of water, constituting therefore the hydrated sesquioxide (red hematite being the anhydrous oxide). When pure, it contains sixty per cent. of metallic iron, but practically and generally the iron in it ranges from forty to sixty per cent. of the mass. It is a peculiarity of this iron ore that it never occurs in regular and continuous deposits, but is found in concretions or botryoidal masses in sand or clay, filling crevices, pockets, and basins, or incrusting slopes; wherever, indeed, chalybeate water has precipitated its iron. Oftener than otherwise it is found associated with limestone rocks, because they more easily than others are dissolved by atmospheric water so as to form caverns and galleries where it may accumulate; and also because the limestone sometimes contains much iron, and in the removal of the carbonate of lime by solution the oxide of iron is left, and, to a certain extent, takes its place.

A belt of limonite ore-beds passes down along the flanks of the Alleghanies from Maine to Georgia; and these deposits occur chiefly along the outcrops of the metamorphic Silurian limestones. Limonite also occurs in concretionary masses in the Cretaceous and Tertiary strata of this region, and in cavities or fissures in serpentine and other metamorphic rocks. Every thing indicates that these deposits were formed by the accumulation of the oxide of iron precipitated from the ferruginous drainage of the iron-bearing Alleghany highlands. In date they range from the Cretaceous to the present time, and in quantity they vary from a few pounds to many thousands of tons. As will be inferred from the above description, the deposits of limonite are less regular and reliable than those of any other kind of iron ore. From its soft earthy and fusible character, this ore has been an important adjunct to the magnetic ores, and the two are now generally worked together.

Another series of deposits of limonite, scarcely less important than those we have enumerated, is one that reaches up along the west side of the mountains through Alabama and Tennessee into Kentucky, the most important beds being found along the outcrops of the Lower Carboniferous limestone. The ore occurs here in irregular accumulations similar to that of the eastern belt, but on the whole it is more inclined to form concretionary masses, and is of better quality.

Another brown hematite belt is found in Missouri. This sweeps in a circle around the Eozoic area which holds the crystalline ores of the central part of the State, and doubtless, as at the East, the

one kind of ore is derived from the other. The limonites are unquestionably destined to play the same important part in Missouri that they have done along the Alleghany belt, in the reduction of the crystalline ores.

ANALYSES OF LIMONITE IRON ORES.

| | Brandon, Vt. | Shelby, Ala. | Dutchess Co., N. Y. |
|---|---|---|---|
| Peroxide of Iron, | 66.16 | 82.82 | 91.89 |
| Silica, | 12.69 | 0.29 | 4.02 |
| Phosphoric Acid, | 0.92 | 0.15 | trace. |
| Sulphur, | 0.22 | | 0.25 |
| Lime, | 2.25 | | 1.06 |
| Alumina, | 4.50 | 0.35 | 1.03 |
| Magnesia, | 1.14 | | .23 |
| Manganese—Oxide, | 0.09 | 0.67 | .32 |
| Water, | 10.53 | 14.62 | 1.15 |
| Carbonic Acid, | 1.17 | | |
| Total, | 99.67 | 99.00 | 99.95 |
| Metallic Iron, | 46.31 | 57.97 | 66.53 |
| Sulphur, | 0.22 | | 0.25 |
| Phosphorus, | 0.49 | 0.081 | trace. |

## THE CARBONATES OF IRON.

Spathic Iron (the crystalline or sparry carbonate) is one of the most important iron ores of Europe, and from its great purity is largely employed in the manufacture of steel. It is a little remarkable, however, that in the great varieties of useful minerals found in America, this ore of iron is apparently rare. Only two deposits of it are known in the United States which have any economic value. One of these is situated in Roxbury, Connecticut, where it forms a true fissure vein, which has been more or less worked as a silver, copper, and iron mine for nearly a hundred years. Ore from this mine contains sulphides of iron, copper, and zinc, which require to be removed before it can be successfully used, and the quantity is so limited that hitherto the working of the mine has not been remunerative.

The other deposit of sparry carbonate referred to is in Vermont, southeast of Burlington. It is similar in its general features to that of Roxbury, and has been somewhat worked by the Collins Iron Company, but not with very satisfactory results.

The earthy carbonate of iron ("Clay ironstone," "Shell ore," "Kidney ore") is found chiefly in the Coal Measures, where it forms

nodules or "kidneys," which are imbedded in the shales interstratified with the coal-seams. This variety of ore is sometimes called siderite, or spathic iron; but these names are only properly applied to the crystallized carbonate of iron.

In England and Wales the greater part of the iron made has been obtained from the clay ironstones. In this country, also, they have been much used, especially in Western Pennsylvania and Ohio; but they are now being rapidly superseded by the richer crystalline ores of Lake Superior and Missouri. The earthy carbonate is quite plenty in all parts of the Alleghany coal-field, and occurs, though less abundantly, in Illinois and Missouri. It is also found in the series of rocks that contains the lignites of the Far West. These are mainly of Cretaceous age, but in many respects they surprisingly resemble the Carboniferous Coal Measures. Clay ironstone usually contains from thirty-three to thirty-five per cent. of metallic iron. Where the nodules are thickly packed they may be mined by drifting; but in most localities they are too sparsely distributed to be mined for, and are gathered by "stripping" from the superficial deposits. In some parts of the Alleghany coal-field—as in Southern Ohio, West Virginia, and Western Pennsylvania—the earthy carbonate forms continuous sheets of ore from six to eighteen inches in thickness, usually associated with the limestones of the Coal Measures. These ore-beds have supplied in former years nearly all the furnaces of Southern Ohio. In working them, it is found that a stratum one foot in thickness will pay well for systematic mining, and the cost to the proprietors of the ore delivered at the furnace, for the last five years, has been about $2.50 per ton.

*Black-band ore* (also a carbonate of iron) is a bituminous shale containing from twenty to forty per cent. of metallic iron, uniformly disseminated through it; and this is associated with ten to twenty-five per cent. of combustible matter. The black-band ores of Scotland, of which the utility was only discovered in 1801, now form the chief basis of the iron industry of that country. The iron produced from them is highly carbonized, very fusible, and admirably fitted for castings, but it contains considerable phosphorus, and can not be economically employed for the manufacture of steel. Its application, however, in the arts, is so extensive that the famous *Scotch Pig*—as it is called in commerce—is distributed from Scotland to almost all parts of the civilized world. In the United States, black-band iron ore has not been carefully sought, except in certain localities, and up to the present time we are scarcely informed as to the quantity

or quality of the deposits we have of it. Many years ago it was recognized in Ohio, and for more than forty years has been locally quite largely mined and consumed there. It is found at two or three horizons in the Coal Measures, but chiefly at the top of the lower coal series, where it locally forms the roof of coal No. 7. It is there from three to ten feet in thickness, having the appearance of any other bituminous shale, from which it is distinguished only by its greater gravity. Unfortunately most of the black-band of the area referred to in Ohio has been cut away by the erosion of the broad valleys which traverse the Coal Measure plateau, and hence it occupies but a fragment of its ancient territory. Enough of it, however, remains to supply many furnaces for an indefinite period, and this district supports now an iron industry which is rapidly increasing in importance, and which is in all its conditions quite distinctive from any other in the country.

ANALYSES OF CARBONATE IRON ORES.

| | Spathic, Vermont. | Kidney Ore, Ohio. | Kidney Ore, Ohio. | Black-band. | | |
|---|---|---|---|---|---|---|
| | | | | Mineral Ridge, O. | Tuscarawas Co., Ohio. | |
| | | | | | Raw. | Calcined. |
| Protoxide of Iron, | 45.56 | .... | .... | 26.82 | 23.02 | .... |
| Peroxide of Iron, | .... | 12.34 | 7.60 | 8.94 | 8.79 | 75.00 |
| Oxide of Manganese, | 2.62 | 1.70 | 1.35 | 1.00 | 1.70 | 1.65 |
| Alumina, | .79 | 0.50 | 2.60 | trace. | 0.70 | 0.60 |
| Lime, | .82 | .... | .... | 1.05 | 1.70 | 2.80 |
| | | Carbonate. | Carbonate. | | | |
| Magnesia, | 8.13 | 5.33 | 6.50 | 0.97 | 0.88 | 1.48 |
| Sulphur, | .94 | trace. | 0.18 | 0.18 | 0.11 | trace. |
| Phosphoric Acid, | trace. | .... | 0.863 | trace. | 0.492 | 0.773 |
| Silica, | 3.27 | 11.94 | 8.96 | 11.84 | 26.22 | 17.02 |
| Water, | .... | .78 | .... | .... | .... | 0.25 |
| Volatile Matter, | .... | .... | .... | 30.50 | 21.10 | .... |
| Carbonic Acid, | 38.16 | .... | .... | 18.30 | 15.00 | .... |
| Lime Phosphate, | .... | 1.74 | .... | .... | .... | .... |
| Lime Carbonate, | .... | 8.59 | 7.35 | .... | .... | .... |
| Iron Carbonate, | .... | 56.23 | 64.17 | .... | .... | .... |
| Copper, | trace. | .... | .... | .... | .... | .... |
| Total, | 100.29 | 99.15 | 99.573 | 99.60 | 99.712 | 99.573 |
| Metallic Iron, | 35.74 | 35.88 | 36.31 | 27.12 | 24.06 | 52.50 |
| Phosphorus, | trace. | 0.797 | 0.376 | trace. | 0.216 | 0.34 |
| Sulphur, | .94 | trace. | 0.18 | 0.18 | 0.11 | trace. |

In the anthracite region about Pottsville, some black-band ore

has been discovered, and that of excellent quality, but it is not yet demonstrated that the quantity is sufficiently large to justify our enumerating this among the iron resources of Pennsylvania. From the similarity of structure which prevails in the different parts of our coal-fields, and the resemblance they bear to the coal-basins of the Old World, where black-band is known to abound, it would be very surprising if no other deposits of this ore were found in the country than those now known. Resembling so little as black-band does any other variety of iron ore, the eye must be specially educated to detect it; and it is no wonder that it has generally escaped notice. It is, however, to be looked for in all of our coal-basins, and every dark shale should receive inspection with a view to its discovery.

## II. IRON MANUFACTURE.

In the preceding notes we have enumerated and briefly described the iron ores found in the United States, and have indicated the location and character of each of the more important deposits. We have thus hastily reviewed the nature and location of the materials—so far as ores are concerned—now in use by our iron manufacturers, and have pointed out the source of supply upon which we must depend in any future development of our iron industries.

Doubtless to many readers the facts which we have given would have a certain significance and interest if left to stand as written, without note or comment; but it has seemed to us that their import and value would be considerably enhanced if their bearing on the present and future of our iron industries could be distinctly shown. It is evident, however, that the necessary brevity of this Article will forbid any thing like a full and satisfactory discussion here of this great subject; but we take the liberty of adding below a few words on the present condition of manufactures of iron and steel, with some suggestions in regard to their possible expansion and improvement, which we trust will be looked upon as a not unwelcome supplement to what has gone before.

The production of iron in the United States was in 1873, 2,868,278 tons, made in about six hundred and sixty-six furnaces, mainly located in six "iron districts," which are briefly described below.

1. *The Iron District of the Northern Alleghanies*, in Eastern New York, New Jersey, and Eastern Pennsylvania. The furnaces in this region number about two hundred. The production of iron is about 900,000 tons per annum, or one-third of the entire product of the

United States. The fuel, except in a few charcoal furnaces, is anthracite from Pennsylvania. The ores are mainly magnetic and brown hematite, to which are added some specular ores mined at Rossie, N. Y., and imported from Algeria, and some Clinton ore brought from Central New York. The principal centers of manufacture are Port Henry, Troy, the banks of the Hudson, Orange County, N. Y., Ringwood, Phillipsburgh, Boonton, etc., N. J., and the Lehigh, Schuylkill, and Susquehanna Valleys, in Pennsylvania. The fuel employed in this region (anthracite) is of the very best quality: it is indeed the type of excellence for smelting purposes, being highly concentrated, hard enough to bear the heaviest burdens, and containing but a small percentage of ash and sulphur. The iron produced is generally excellent for most purposes. The furnaces are usually from forty-five to sixty feet in height, with a diameter of bosh of from thirteen to sixteen feet, the maximum yield being about three hundred tons per week. The average cost of production is, at present prices, twenty-eight dollars per ton at the furnace. The number of rolling mills in this district is very large, and the establishments in which pig and bar iron are further manufactured are innumerable. From the fact that the ore chiefly used in this region contains considerable phosphate of lime, the pig iron carries from 0.5 to 1.0 per cent. of phosphorus, and hence is not adapted to the manufacture of steel. There are, however, in this district three large and successful Bessemer steel works, at Troy, Bethlehem, and Harrisburg, and one for the manufacture of steel by the Siemens-Martin process, at Trenton. By a careful selection of the ores, it is quite certain that sufficient steel can be produced here to supply the home demand. But the great centers of steel industry will be located in the Western States, where the ores are more free from phosphorus, and equally good fuel is attainable. From its proximity to the older centers of population, the manufacture of iron has here more maturity than any where else in the country. Time—an indispensable element in the growth of iron manufactures—has produced here not only a multiplication of furnaces and a magnitude of product, but the concentration of capital and the improvement of processes beyond what can be found elsewhere. It is easy to show, however, that the manufacture of iron is still susceptible of expansion and improvement in this district.

2. *District of the Southern Alleghanies*, in the States of Maryland, Virginia, North Carolina, and Georgia. The number of furnaces in this district is about forty, of which one-half are in Eastern

Maryland. The ores are magnetite, brown hematite, and earthy carbonates, the last two chiefly used in Maryland. The fuel employed here is coke from Cumberland coal and Pennsylvania anthracite in Maryland, coke from Richmond coal and charcoal further South. The resources of this region have as yet been but partially developed. As has been already stated, the deposits of magnetic iron ore in Virginia, North Carolina, and Georgia are very extensive, and some of these ores are equal in purity to any in the world. These are, however, for the most part, yet untouched. Many of them are covered with the primeval forests, where the land can be purchased for a trifle. When, however, a better state of things prevails in the social and political condition of the South, the great natural resources of this region will assert themselves. Capital, skill, and enterprise will flow in, and another generation will see this the theatre of great industrial activity. The want which the manufacturer of iron will most feel in the southerly prolongation of the Alleghanies, will be that of a good and cheap mineral fuel. Charcoal may, however, be produced here in abundance for many years, and the excellent bituminous coals of East Tennessee and West Virginia will be within easy reach. We may expect, therefore, that this will in the future become one of the most important centers of iron production in the United States.

3. *District of Central Pennsylvania.* This name may be given to a region which has already considerable importance as a center of iron production, and is destined to take a still more conspicuous place in the iron industries of the country. It lies chiefly in Pennsylvania, where it covers the counties of Blair, Centre, Huntington, Franklin, Bedford, and Cambria; also the western portion of Maryland and the central portion of New York. The ore used is chiefly Clinton, here largely developed. To this is added some brown hematite and Coal Measure carbonate, and also Lake Superior specular (at Johnstown), Rossie and magnetite (in New York).

The number of furnaces is about one hundred. The fuel used, one half charcoal, the other half anthracite and coke; the latter made mainly from semi-bituminous (Blossburgh, Broad Top, and Cumberland) coal. The most important elements in the present and future of the iron manufacture in this district are the excellent semi-bituminous coals and heavy deposits of Clinton ore brought into close proximity. The chief centers of production are Johnstown, where the Cambria Iron Works are located—the most extensive in the United States—and the Broad Top region, where the iron is

now made more cheaply than any where else in the Eastern States. Besides the Broad Top and Blossburgh coal-fields, the famous Cumberland coal-basin lies within this district. South of this, on the Upper Potomac, is another coal-field of similar character, and along its margin beds of Clinton ore crop out which are unequaled in their magnitude. With these resources it is hardly possible that the manufacture of iron can fail to be largely expanded in this region.

4. *District of the Upper Ohio.* This includes Western Pennsylvania, West Virginia, Eastern Ohio, and Northern Kentucky. Of this district the chief center is Pittsburgh, now the most important iron market in the United States. The furnaces are located in the Mahoning and Shenango Valleys, in and about Pittsburgh, in the Valley of the Ohio, at Steubenville, Wheeling, Ironton, Ashland, etc. They number about one hundred and seventy-five. The ores used in this region are chiefly Lake Superior specular and Coal Measure carbonates, with a considerable importation of Canadian and Missouri ore. The fuels employed are, in nearly equal proportions, coke, raw bituminous coal, and charcoal—the mineral fuels, however, rapidly replacing the latter. In this district are several subdistricts, which present individual characteristics worthy of mention. 1st. Pittsburgh and Southwestern Pennsylvania. Here the fuel employed is mostly coke derived from the Pittsburgh seam about Pittsburgh and at Connellsville. The latter is the great coke-making center of the country. The coke produced here is very dense and pure, and is, in fact, equal to any in the world. Its excellence is attested by the fact that it is largely shipped to supply furnaces even as far west as St. Louis. In most of the furnaces of this region about two tons of coke are used to make a ton of iron. At Pittsburgh, however, some furnaces have recently been constructed eighty-five feet in height—the largest in the country—and it is claimed that in these a ton of iron is made from a ton and a quarter of coke. At Pittsburgh the manufacture of iron is carried on in all its varied branches: a large amount of cement steel is also made here; and furnaces have recently been erected for the manufacture of iron and steel by a direct process—invented by T. S. Blair—and one which promises to be eminently successful.—2d. The Shenango and Mahoning Valleys. In these valleys and near them are located about sixty furnaces, all using for fuel the "Brier Hill" or "Ormsby" coal, and Lake Superior ore. The coal of this district is from the lowest seam (No. 1) in the Alleghany coal-field. It is a hard, bright, open-burning bituminous coal, which is used in the raw state for smelting iron. It

contains a small amount of ash and is remarkably free from sulphur, being in fact one of the best furnace fuels known. This is attested by the fact that a large amount of iron is made with it which ranks with charcoal iron, and is extensively used for car-wheels, the manufacture of Bessemer steel, etc.

On the margin of this district, and sharing its facilities for the manufacture of iron, is Cleveland, now the greatest iron-ore market in the country, and in which the iron industries are rapidly increasing in importance.

3d. The Hanging Rock sub-district, in Southern Ohio and Northeastern Kentucky. Here are over fifty furnaces, all but ten in Ohio, mostly using charcoal for fuel and Coal Measure ores. This was formerly the chief center of iron production in Ohio, and the iron made there has been of special excellence, but the supply of charcoal is limited; the furnaces are small, and are being rapidly superseded by those in which raw bituminous coal is used. This is of excellent quality, and is supplied from the fine coal-fields of Perry, Hocking, and Jackson County, Ohio, and Ashland, Kentucky.

As a part of the iron district of the Upper Ohio, we should mention the black-band iron region of the Tuscarawas Valley in Ohio. The ore of this locality has been already mentioned. There are but five furnaces now in blast here, but they are making iron in a way peculiarly their own, at least for this section of the country, as they imitate precisely the manufacture of "Scotch pig" from the black-band ore of Scotland. The fuel used here is raw coal from seam No. 1 (the Massillon coal).

In the region of the Upper Ohio the carbonates of the Coal Measures are found in greater abundance than in any other part of our country, and the manufacture of iron was begun and for a long time maintained by their use. These ores are, however, being gradually superseded by the richer crystalline ores brought from Lake Superior and Missouri, and it is evident that while they will continue to form an important element in the manufacture of iron, that will be based for the most part in the future on the use of foreign ores. These will, however, continue to be imported in greater quantities, attracted by the abundance of excellent coal. This is in fact by far the richest portion of the American coal-fields. Including as it does the Kanawha Valley, where there is an unequaled concentration of coal; Western Pennsylvania, with its splendid Pittsburgh seam; Eastern Ohio, with its extended outcrop of the Brier Hill coal, and the Hocking Valley, with its Straitsville coal some-

times twelve feet in thickness—to say nothing of the intervening territory, wholly underlaid with coal-seams—this district contains an amount of excellent fuel which will not only by exportation form the main spring of a great iron manufacture elsewhere, but will draw to itself the ores from the east, west, north, and south, and make this the great center of iron manufacture in the country.

5. *District of the Upper Tennessee.* This district includes the West Slope of the Alleghanies, the Valley of East Tennessee, North Georgia, and Northern Alabama. It now contains about fifty furnaces. The fuel used is mainly charcoal, though excellent bituminous coal occurs over a large part of its area. The most abundant ore is the "Dye-stone," or Clinton ore, which stretches in an almost continuous belt from Cumberland Gap to Rome, Georgia, and occurs in strata of from two to ten feet thick. Large deposits of limonite are also found here, those of Northwestern Georgia and Northern Alabama being especially abundant and good, as well as lying in close proximity to the coal. In East Tennessee, south and east of Knoxville, deposits of rich and pure specular ore are known to exist, but their extent is not yet determined. Beds of oxide of manganese of superior quality are also found in the same region. The mineral resources of this district are not surpassed by those of any other portion of our country, but for the most part they still lie undeveloped. Iron is probably now made more cheaply here than any where else in the United States, and, with better facilities for transportation affording a better market, its production could be almost indefinitely increased. At present all industries languish here, and coal and iron properties of the greatest intrinsic value can be purchased at from one dollar to five dollars per acre. On the Lower Tennessee and Lower Cumberland a group of furnaces have been in operation for many years, the fuel used being charcoal, the ore—limonite—associated with the subcarboniferous limestone.

6. *The Missouri Iron District.* The ores of this district constitute its special attraction. Those of Iron Mountain, Pilot Knob, Shepherd's Mountain, etc., are recognized as forming perhaps the most extensive deposits of rich and pure iron ore known in the world, and have been already noticed. In addition to these should be mentioned deposits of specular ore in the center of the State, of red hematite north of the Missouri, and of brown hematite, forming an immense number of deposits in the country surrounding the area of crystalline rocks and ores. The centers of manufacture are Carondelet, Pilot Knob, and Grand Tower at the mouth of the Big Muddy.

The furnaces are twenty-five in number. The fuels used are charcoal in Central Missouri; at Carondelet and Grand Tower, half Connellsville coke, half Big Muddy coal. The great want of this region is cheap and good fuel. This will never be fully overcome, but will doubtless be partially met by improved methods for coking the Illinois coals. There is every reason to believe that a great iron industry will spring up in Missouri, but it is no less certain that a large part of the rich ores of the State will be shipped for manufacture to localities where good coal is more abundant.

7. *Lake Superior Iron Region.* The ores of this district have already been so fully described as to require here no lengthy notice. From the want of mineral fuel on the shores of Lake Superior most of these will go elsewhere to seek the coal; but with the richer ores—which will best bear the cost of transportation—there are found immense quantities of lower grade, that must be smelted, if at all, at home. For the reduction of these ores a limited supply of charcoal can be obtained near at hand; but the iron industry which is destined to grow up here must depend mainly upon the importation of mineral coal brought as ballast by returning ore-vessels.

As dependencies on the Lake Superior iron district, we should mention the great number of furnaces and iron works located at Escanaba, Milwaukee, and Chicago, on Lake Michigan; Detroit, Cleveland, Erie, and Buffalo, on Lake Erie. To these and other points on the shores of the Great Lakes the ore is floated cheaply, and is manufactured where disembarked, or is distributed through the interior to be brought in still closer proximity to the coal; as at Brazil, Indiana; Columbus, Youngstown, etc., in Ohio. Already a great iron industry has grown up, based on the relations which have been indicated between the ore and coal. Within the last fifty years the increase of population and wealth along the shores of the Great Lakes has been almost without parallel in the history of the world. The next half century will probably witness even greater changes. To this prospective growth an abundance of iron will be a necessity, and this, from the nature of the case, must be furnished from three points or lines of manufacture: first, near the mines, where a limited quantity of iron will be produced from charcoal and coke or coal brought as return freight; second, along the shores of the lakes, where the ore is transhipped and meets coal from the interior; third, in the vicinity of the coal mines, to which the ore is brought overland by rail. Neither of these points or lines can monopolize the iron manufacture, since return freights must be furnished

to empty coal-cars as well as empty ore-vessels. The preponderance of the lake shores or the interior will be determined mainly by the point to which economy of fuel can be carried in our iron manufacture. One and one-half tons of rich Lake Superior ore will make a ton of iron, while two and a half to three tons of coal are at present consumed in smelting it. Hence it would seem cheaper to carry one and a half tons of ore to the coal than two and a half tons of coal to the ore. But since the lake market is the great market, most of the iron made in the interior will be brought back to the lakes, thus equalizing the inequality, and making the lake shores at the present time as favorable locations for the manufacture of iron as the interior. If now it were possible to improve our processes of iron manufacture till we could make, as they do in the Cleveland district, England, a ton of iron from a ton of coke or from a ton and a half of raw coal, it is easy to see that the lake shores would become the best positions for the manufacture of iron. This result might be attained by improving our processes and increasing the capital employed in the iron business, or, to be more specific, by bringing several furnaces under one enlightened management, and doing the business by wholesale rather than retail, and by adding to the height and capacity of the furnaces and increasing the pressure and temperature of the blast. All these improvements are, in time, sure to be made, and therefore we are safe in predicting that the shores of the lakes will become the chief places of manufacture of the Lake Superior ores.

8. *The Far West.* Little iron is yet made west of the Mississippi. Good ores abound, however, in many places, as magnetic and specular ores in the Rocky Mountains of Colorado, Utah, and New Mexico, and in the Sierra Nevada of California. Clay ironstone of good quality also exists in connection with the Cretaceous lignites of Wyoming and Colorado. On the Chug Water in the Black Hills are heavy beds of magnetite, but these are so much contaminated with titanium as to be valueless. Throughout the Far West, timber, as a general rule, is not abundant, and hard-wood timber is almost unknown. Good charcoal is therefore out of the question. Hence it is easy to see that the future success of the iron manufacture in that region will depend on the utilization of the Cretaceous and Tertiary lignites as furnace fuels. Though generally unfit for use in the blast furnace, they can undoubtedly be employed with Siemen's regenerator, and by this means the wants of the population can certainly be supplied with iron of home production.

## THE FUTURE OF OUR IRON INDUSTRY.

On the preceding pages we have given a hasty sketch of the resources of our country in iron, and of the present condition of our iron manufacture. Though necessarily brief and imperfect, we think it will be conceded that this sketch shows that our iron ores are abundant, varied in character, and conveniently distributed; that they are a fit counterpart and adjunct to our unequaled deposits of coal; and, further, that combining these two great sources of national wealth, they form the richest material endowment of the American people, a fund well-nigh inexhaustible, the use of which must profoundly affect our future history. We have also shown that these resources have given birth and sustenance to what has now become the greatest of our manufacturing industries, one that has grown to such extent that the United States is now second on the list of the iron-producing nations of the world. One question of vital interest, however, still remains to be considered in this connection, and that is, what is the probable future of this great industry?

Although it has attained such gigantic dimensions, the manufacture of iron in the United States has acquired its importance within the last fifty years, and it may almost be said within the last quarter of a century. Within the last decade its growth has been specially rapid, and also apparently healthy, for the demand has always exceeded the supply to such a degree that our importations have nearly equaled our home production. Until the last year the progress of iron manufacture has been constantly upward and onward. Individuals and communities have been enriched by it; towns and cities without number have grown up under its potent stimulus. All branches of the manufacture have been prosperous, and even all those who dealt in iron, if they manifested ordinary business capacity, were successful beyond those engaged in any other department of commerce. This was the state of things till the autumn of 1873. Then suddenly the whole scene changed. The financial panic arrested the construction of railroads—which have always been the greatest consumers of iron—put a stop to many other enterprises in which iron was largely used, and induced a general paralysis of business, in which the iron trade suffered more than any other. Since then the production of iron has fallen off nearly one-half. A large number of our furnaces have gone out of blast, and others are rapidly following suit. In all our centers of iron production stock has accumulated until it represents a large part of the manufacturer's capital,

and no longer serves even as security for borrowed money. In a glutted market sales can not be effected even at greatly reduced rates, and, as a consequence, universal embarrassment and distress have befallen those who were before the most independent and prosperous of our business-men, and tens of thousands of our most useful artisans have been thrown out of employment. Naturally we every where hear these men anxiously asking, When and how is this distress to be alleviated? Can the former prosperity of our iron industry be regained, and if so, how can it be maintained above the chances of such ruinous crises as that we have just experienced? For full and satisfactory answers to these questions more than human wisdom and forecast are required; and yet some rays of light may be made to penetrate the darkness by an intelligent inquiry into the causes of the catastrophe, and an investigation into the possible means of strengthening our iron industry in the future.

As to the causes of the panic, there is probably not much difference of opinion among thoughtful men. A long course of prosperity, and specially the rapid recovery and expansion of business after the war under the stimulus of an inflated currency, had made our people sanguine, rash, intoxicated. Business had become largely speculative in character. Legislation was specially framed to favor banks and railroads. The abundant money of the banks was freely loaned, and furnished an unhealthy stimulus to all branches of business. Railroad building, especially, was overdone. A reaction was inevitable. Sooner or later a day of reckoning *must* come. In short, our people had been on a frolic and must "pay the piper." The railroads were the first to suffer, as they had been the greatest offenders; but in their fall they dragged down every commercial and manufacturing enterprise. The revival of business under such circumstances must necessarily be slow, but it has been greatly retarded by the delay of Congress in adopting a financial policy. It mattered comparatively little *what* policy was adopted, whether one of inflation or contraction. Either would have been better than the evils resulting from a continued paralysis of business, and either would have set the wheels of industry in motion again. Until such a policy shall be definitely adopted by Congress, it is hopeless to expect that the great industrial enterprises of the country will resume their activity. Without this they have no solid foundation to rest upon; and such massive structures can not safely, and will not be, founded on shifting sand. In addition to this, confidence must be restored by the substitution, if not of strict honesty, at least of legitimate busi-

ness enterprise for the speculative and peculative spirit which was recently the order of the day. Human nature makes such reforms slowly and regretfully, and time will be required for them; but they must come, or there is no health nor safety nor future for us as a nation. A better day is, in fact, sure to come. The resources of our country are so great, the vigor and intelligence of our population so marked, and its morality so far inviolate, that its energies and virtues are sure to reassert themselves, health and vigor to be regained, growth to be resumed. A sharp and killing frost is a sad calamity. It mars and scathes all the luxuriance and beauty of nature; but it has its benefits as well, and is at worst a necessary evil. It wilts and destroys all sappy weeds and fungus growths. Yet it leaves the hardy plants, stripped of their foliage maybe, but with their vitality untouched.

In due time natural causes will restore to the business of the country its former vigor and activity, and with this we shall see the iron manufacture recover from its present depression. It supplies an indispensable element not only to all progress, but to the maintainance of normal health in every community; even as iron forms an indispensable element in the vital fluid of the individual. But it is to be hoped that its life will be less feverish and its growth be more sound and healthy than heretofore. That this necessity will be laid upon it may be plainly seen. As has been said, the importation of iron into this country has been equal to the home production, and this importation has been burdened with three thousand to four thousand miles of transportation and a heavy duty. These facts prove that iron is made abroad for about half what it costs to make it here. The question whether this difference can be extinguished is one of vast import to our iron industry. Most of the foreign iron used in this country is made in England, but even a cursory examination of the conditions of the iron manufacture there, will show that the materials from which iron is made are less abundant and less excellent than with us. Of both ores and fuels we have at least twenty times the quantity contained in the United Kingdoms, while in quality ours are better and more varied, and they are as conveniently located. How, then, does it happen that the ingenious, enterprising, and energetic Americans are so far outdone by their English relatives? The answer is very simple. The English manufacturer owes his superiority to three things, viz. *cheaper labor*, *greater capital*, and *improved processes*. The item of labor in the production of a ton of iron is in this country usually reckoned at about $4, but

this refers only to the labor expended upon it at the furnace; in fact, the high price of labor also affects the price of the ore, fuel, flux, and transportation to and from the furnace. This may be safely reckoned at from $4 to $6 more; so that the item of labor in the cost of a ton of iron should really be reckoned at from $8 to $10. In England the price of labor has somewhat enhanced of late, and it can not be safely reckoned at less than $5 per ton; hence the English manufacturer has an advantage of $3 to $5 per ton in the matter of labor. His greater capital enables him to manage a large establishment with several furnaces by a simple and thoroughly systematized administration, and permits him to reap all the advantages of doing business by wholesale rather than retail, both in buying and selling. His processes are better in this, that he uses larger furnaces, in which the blast has a higher temperature and pressure, and in which the materials are mingled according to reason rather than by the rule of thumb. Each great iron establishment has its educated expert who brings to the problems before him a thorough understanding of the composition of the materials used, of the changes which take place in the furnace, and also of the lessons taught by experience in other establishments and in other countries. Under his direction the height of the best English furnaces has been carried up to one hundred feet, and the weekly product made to reach six hundred tons; and the consumption of fuel has been so far economized that a ton of iron is made with a ton of coke, about half what we use. When, therefore, we shall have acquired the necessary capital, and shall have simply imitated the methods which are the healthy growth of experience abroad and are there in daily regular practice, we shall be able to make iron in all its varieties better and cheaper than it can be done any where else in the world, except only the difference in the price of labor. This difference is less than the cost of transportation on English iron to the place where it is used, and is constantly diminishing by the increase of the cost of labor in Europe. So that when we have merely adopted the methods in constant use in the Old World, we can dispense with the tariff and defy foreign competition. Home competition will, however, be in full activity, and to this we must look for the needed reforms. In the present paralysis of business there would seem to be little incentive to such improvements as we have indicated, but the "struggle of life," which has hitherto hardly been felt in the iron manufacture of this country, is destined to be hereafter sharp and bitter. Hitherto, under the stimulus of a constantly

expanding market, and under the shield of the tariff, all our iron works, even with small furnaces and rude processes, have done well, and have made the owners rich. Now, only those specially well located and well managed will do this. The others will make little, or lose money, and will be compelled to reduce the costs of their iron by improving their methods. Then the lessons of adversity will not be lost upon our iron manufacturers; and when the present storm has wrought its work and passed, we may expect the iron industries of the country to exhibit a stronger, healthier growth than ever before. Then they will need no protective tariff, but will be self-sustaining, and will produce all the iron consumed in America, even if the demand should increase in the same ratio as during the last happy ten years.

ARTICLE IV.

# STUDY OF THE GREEK AND LATIN CLASSICS.

CHARLES ELLIOTT, D. D.

THE tendency in the minds of some to exalt the present by depreciating the past, has led to false views on many subjects. Among these may be included the study of the Ancient Classics. Carried away by some favorite pursuit, enthusiasts have advocated their removal from the course of a liberal education, and the substitution of some department of science which they conceive to be more in accordance with the advancement and spirit of the age. Others have found in them lessons dangerous to morality, and have expressed themselves as though they dreaded, from their use, the return of the ancient polytheism. Others, again, who look at the useful, have urged that their study has no tendency to fit a man for the practical duties of life; and have advocated not only the exclusion of the Greek and Latin Classics from a course of mental training, but every thing else, which does not have a direct practical bearing. *Practical*, with such men, means the conversion of every thing that they touch into gold; and because the Greek and Roman Classics do not point the way to wealth, they are doomed to oblivion.

These objections operate on many minds in the community, and damp the ardor of pursuit which many a generous youth would manifest, were he fully satisfied in regard to their utility.

The question of the utility of any branch of study depends upon the decision of the questions, What is the object of education? and by what means is that object effected? If it be shown that language lies at the basis of intellectual culture, it will be granted by every one not under the influence of prejudice, that the Latin and Greek have as just a claim as any other to be employed for the discipline of the mind in the department of philology.

It is not irrelevant, therefore, to inquire, at the beginning of our discussion, into the nature and object of education.

The word education is of Latin origin. The verb from which it is derived signifies, in that language, *to foster, maintain, bring up, nurture; hence*, to *instruct, train, form.** We use the term in the secondary sense of instructing, training, forming. The word instruction is generally used to signify the imparting of knowledge, which is only a condition and means of education. The latter consists in training, forming. It is the harmonious development of the intellectual, moral, and physical powers of man. Its end is to fit him for the performance of the duties arising out of his various relations, to perfect his whole being.

The mention of man as an intellectual, moral, and physical being, presents to us a complex idea; and we can have no adequate conception of what education ought to be, unless we have some correct apprehension of that complex creature. What, then, is man, his constitution, his relations, and destiny?

Man is composed of soul and body. By means of his soul he is allied to the world of spirits; by means of his body, to the world of matter. The mind is endowed with faculties, which, in their exercise, obey certain laws: the body possesses functions, some of which perform the parts allotted to them without any volition on our part; others follow the dictates of the immaterial principle.

Without strict regard to metaphysical analysis, the faculties of the mind may be divided into the intellectual and moral faculties, and the faculty of taste. By the first, we apprehend the abstract relations of things, and the truth or falsehood of propositions; by the second, we discern the moral quality of actions, and derive the feeling of obligation; by the third, we appreciate the beauty and sublimity of art and of the material world. The body is the mere instrument of perception and action, while, at the same time, it forms the habitation of the spirit.

But our idea of man must be very defective, if we view him in an isolated capacity only, and contemplate his faculties and high endowments without reference to the great spiritual system of which he forms a part. As a member of such a system, he is a subject of moral law administered by the Legislator of the Universe. This law does not view him as an *autoteles*—a being whose end is himself—but as a being whose chief end is to glorify his Creator by the

* It is a mistake to derive the word education, as many do, from *educo, educere*, of the third conjugation. It comes from *edùco, edùcare*, of the first.

highest cultivation and active employment of those mental and moral faculties with which he is so munificently endowed. It ought not to be his aim to secure the greatest happiness and wealth possible for the present term of existence, but to fit himself for that world of which this forms but the vestibule. This is his high destiny. In order to accomplish this destiny, things must not be estimated according to their present importance, but according to their influence on his future well-being. The question, in regard to any pursuit, should be, How will it best promote that well-being?—not, How will it advance him in wealth? Thus things would assume their proper positions and due relations.

The subject, then, to be educated, is a being of wide relations, and of a destiny high as the glory of the Highest. Education is the instrument by which this being is fitted for the performance of the duties arising out of his relations, and assimilated, in some degree, to his high-born and fair original.

But of education there are two kinds. The one is the education of habits and particular faculties; the other, the development of the whole man. The former has reference to some professional calling, and is mistaken by many for true education. So far is this from the truth, as a profound philologist has well remarked, the more a man is educated professionally, the less is he educated as a man. Unacquainted with almost every branch of study not immediately connected with his profession, the furniture of his mind is incomplete. It resembles a room with a beautiful finish and costly paintings on one wall, and with nothing but raw plaster on the other. The mental development of such a man has no harmony, no symmetry of parts.

True education, in its largest sense, is the development of the whole man, physical, intellectual, and moral. It does not consist in Spartan exercises to fit one for successful rivalry in field-games and for high achievements in battle. It does not consist in training the memory at the expense of the judgment, nor in cultivating the esthetic part of our nature to the neglect of the intellectual; nor does it admit of developing the intellect without an attempt at a corresponding development of the moral powers; but it consists in the training and culture of all these, in presenting in one glow of associated beauty all the faculties of body and soul.

In this development education can employ no one instrument. There must be a system of means based upon a correct and philosophical view of the work to be performed. This work, in mental

culture, is to teach the mind how to use its faculties, how to reason correctly on any subject proposed for its consideration.

The method of the mind in reasoning is twofold, analysis and synthesis, or induction and deduction. The relations out of which all science is made up are also twofold—law and observation. A law is a rule of unconditional truth arrived at by the generalization of facts. These facts become matters of knowledge by observation.

"When we reason from the facts to the law, we call it analysis, or induction; when we reason from law to law, when from a known truth we seek to establish an unknown truth, we call it deduction, or synthesis. As, then, all science is made up of law and observation, of the idea and the facts, so all scientific reasoning is either induction or deduction. It is not possible, however, to teach inductive reasoning, or even to cultivate a habit of it directly. We all reason inductively every moment of our lives, but to reason inductively for the purposes of science belongs only to those whose minds are so constituted that they can see the resemblances in things which other men think unlike; in short, to those who have powers of original combination, and whom we term men of genius. If, therefore, we can impart by teaching deductive habits, education will have done its utmost towards the discipline of the reasoning faculties. When we speak of laws and ideas, we must not be understood as wishing to imply any thing more than general terms arrived at by real classification. About these general terms and these alone is deductive reason conversant, so that the method of mind, which is the object of education, is nothing but the method of language. Hence, if there is any way of imparting to the mind deductive habits, it must be by teaching the method of language, and this discipline has in fact been adopted in all the more enlightened periods of the existence of man. It will be remembered, in this method of language, it is not the words, but the arrangement of them, which is the object of study, and thus the method of language is independent of the conventional significations of particular words: it is of no country and of no age, but is as universal as the general mind of man. For these reasons we assert that the method of language, one of the branches of philology, must always be, as it has been, the basis of education, or humanity as such, that is, of the discipline of the human mind."*

Language, moreover, is the instrument of thought: it forms the medium of communication between one mind and another; it is important, then, that the instrument be skillfully handled, that the medium be clear and unobstructed as possible. But this can only be accomplished by a careful study of the nature and powers of the instrument itself.

All this may be admitted, and still it may be asked, What bearing has it upon the study of the Latin and Greek Classics? Why may not a modern language, such as the English, the German, or the French, accomplish all the ends of philological training?

* Donaldson's New Cratylus, pp. 7, 8, Cambridge.

A dead language, the phenomena of which are fixed, has a decided advantage over a living one, which is subject to perpetual change. Its permanence of form affords us better opportunities for philological anatomy, and for gaining fixed ideas of the general analogy of language. Of all dead languages, the Latin and the Greek, with the exception, perhaps, of the Sanscrit, have attained to the greatest perfection of grammatical structure, and to the highest degree of literary culture. No dead language possesses a literature so rich and varied as those of Greece and Rome. These, then, are sufficient reasons for choosing a language, or languages, which we find crystallized in symmetry and beauty, in preference to a living one, which is sometimes advancing, sometimes retrograding; which is modified by local customs, manners, tastes, and habits, and changes its form with the progress or revolutions of society.

It will scarcely be asked, why any other dead language, for example the Hebrew, against the literature of which exist no objections, may not be selected as well as the Latin and Greek. Apart from other reasons that might be assigned, the following is sufficient: The cultivated taste of all ages has preferred the Latin and the Greek, just as it has preferred the painting of Apelles and the statuary of Phidias and Praxiteles to the rude designs and clumsy execution of their barbarian neighbors. If any think this statement disparaging to a language which has preserved to us the writings of inspired poets and prophets, let them remember that the Greek was equally honored as the vehicle of apostolic teaching, and that both it and the Latin are as much the gift of God as the language of Moses.

Having shown that the study of philology lies at the basis of intellectual training, that a dead language is preferable for this purpose to a living one, and that among the dead languages the Greek and the Latin have superior claims, it will be necessary to show the particular manner in which the study of the Classics disciplines the mind, and that it can not, with advantage, be superseded by any thing else.

Suppose, then, a student with his Virgil or his Homer before him. What is the task proposed? It is manifestly, in the first place, to arrive at the meaning of his author. In doing this he makes himself acquainted with the significations of particular words. He next so arranges these words, according to their dependence and agreement, as to make a consistent sense. To do this successfully there is required the exercise of various faculties. Memory is

employed in remembering the significations of words; comparison is exercised in observing their relations and agreement; and judgment, in applying the principles of grammar. But the exercise does not end here. If the student is faithful, he will cultivate his taste in selecting the happiest and most appropriate expressions of his own language, in which to clothe the sense of the original: he will mark the differences of idiom, make himself acquainted with the geographical and historical facts connected with his subject, and inform himself with regard to every allusion to political, social, and domestic life. The study of the Classics, if properly pursued, is not the mere memorizing of words, declension of nouns, conjugation of verbs, and the application of rules for the agreement and government of words; but it is the exercise of memory, reason, judgment, and taste. In separating sentences into their elementary parts, the mind goes through a process of analysis; in combining these parts according to the principles of syntactical structure, recourse is had to the opposite process of synthesis; and in thoroughly comprehending the subject, contribution is laid on almost every department of human knowledge.

A pertinent illustration of the point under consideration may be derived from the study of the English Classics. To understand Milton, for example, requires not only a thorough knowledge of the English language, but also of mythology, theological opinions, and many other subjects. When he speaks of that

> "Crystalline sphere
> Whose balance weigh'd the trepidation talk'd,"

he becomes altogether unintelligible to the reader, unless he have some knowledge of the Ptolemaic system of astronomy; and without some acquaintance with the diseases of the eyes, obscurity must rest upon the passage in which, referring to his blindness, he says:

> "So thick a drop serene hath quench'd their orbs,
> Or dim suffusion veil'd."

There is a higher exercise in studying the Ancient Classics than any which has yet been mentioned. In them we have some of the greatest productions of the human mind. The fountains of history, the wells of poesy, the highest efforts of oratory, the most subtile disquisitions of philosophy are there. They require, therefore, the application of logic and criticism. But to analyze the structure of arguments, to trace the affinities of thought, and to apply the principles of taste is the highest walk of mind, and all this a thorough

and comprehensive study of the Classics requires. The instances are very rare in which all this is fully done during a collegiate course. The most that we can expect to be accomplished there, is to lay the foundation for higher acquisitions.

The classical languages, as an instrument of intellectual development, can not, with advantage, be superseded by any thing else. No one has advocated the appropriation of more time to the study of the mental and moral sciences as an equivalent; for a proper understanding of these is so closely connected with a thorough knowledge of language that little progress can be made in them without it. The comparative merits of a living and a dead language have already been briefly alluded to: it only remains, therefore, to consider the propriety of substituting a more extended course of Mathematics, or of the Natural Sciences.

Let a more extensive course of Mathematics be substituted. In some respects, as an instrument of education, they are superior to the Classics. They accustom the student to patient attention, concentration of mind, and consecutive thought: they impart a habit of precision and logical deduction to a degree which nothing else can accomplish; but by carrying the pupil into the regions of cold abstraction, they chill the aspirations of fancy and fetter the play of the imagination. The reasoning employed in Mathematics, moreover, is not drawn from such a variety of sources as the reasoning required in the study of languages. The mathematician sets out with a few axioms and definitions, and his whole process consists in deducing ultimate or unknown truths from such as are obvious, or based upon previous demonstration. The principal faculties employed in such a process are memory, comparison, and judgment; and these are confined to a narrow, rigorously bounded field. Within that field they are trained to the eagle's quickness and penetration of vision.

The same may be said of the student of languages, who has his author, grammar, and dictionary. But in conducting their respective processes a great difference will be observed. The mathematician deals only with the relations of number and quantity: the student of languages deals with the significations of words, their relative position in a sentence, the selection of such terms as will best express the idea, with grammar, context, geography, history, and archæology. It will be readily perceived, therefore, that in the study of languages a greater variety of faculties will be called into exercise than in the study of mathematics; or that, at least, the same faculties will have a wider exercise.

The demonstrative character of mathematical reasoning, which is one of its excellences, has not the happiest influence upon the mind of the mere mathematician, when moral subjects are presented for his consideration. Accustomed to his incontrovertible axioms, his exact definitions, and infallible conclusions, he looks for the same in moral questions. But they are not to be found; and if he does not turn skeptic, it can not be said that his mathematics saved him. On moral subjects, the student of language, other things being equal, has the advantage. All his reasoning in that department has been of the probable kind; and consequently he is better prepared to appreciate the evidence and reasoning employed in moral subjects.

To those who advocate the substitution of a more extended course of the Natural Sciences for the study of the Ancient Classics, the following considerations are submitted. They cannot accomplish their own purposes, together with those to be accomplished by the study of languages. Their relation to the mind is different; and it is important that every science should be considered in its relation to the mind, before the arrangement best fitted to develop the mental faculties can be determined. All science is in the mind, and its method is the same in every department; but each particular science has objects peculiar to itself, and differs from another, in its relation to the mind, according to the nature of its objects. The objects of Natural Science are the phenomena and laws of the material universe. To observe, collect, experiment upon, and classify these phenomena are the mental acts and processes employed in its pursuit. By such acts and processes inquisitiveness is awakened, the faculty of observation is cultivated, and habits of close attention are formed; but it seems to us that reflective habits are not cultivated to a corresponding degree. Where the external occupies so large a space in the mental vision, the internal must dwindle into comparatively small dimensions.

To form the mind to reflective habits and give it vigor and tone, it is necessary to throw it back upon itself, to observe its ever-varying phenomena, and to analyze its complex operations and emotions. Now these are found objectively in language.

"We find in the internal mechanism of language the exact counterpart of the mental phenomena, which writers on psychology have so carefully collected and classified. We find that the structure of human speech is the perfect image or reflex of what we know of the organization of the mind; the same description, the same arrangement of particulars, the same nomenclature would apply to both, and

we might turn a treatise on the philosophy of mind into one on the philosophy of language by merely supposing that every thing said in the former of the thoughts as subjective, is said again in the latter of the words as objective."*

The study of the Natural Sciences can not give the same kind of discipline only; but it can not give the same amount that the study of the Classics can.

These sciences may be taught in two ways, either systematically and in their full extent, or merely in outline and so as to convey some idea of their objects and leading principles. If they are taught in the former way, they are much too laborious as a mental discipline for the general student; if in the latter, they will have very little effect in cultivating the mind. On the contrary, in a majority of instances, they will lead to a dissipation of time and talents, unless pursued with other studies that require severer application.

It is not our intention to detract from the merit of the Physical Sciences. They form a noble study, well adapted to enlarge the mind and give it comprehensive views of the system of things. But it will scarcely be urged that the study of them can accomplish all their own ends, together with those of the study of language. And here it may be of importance to remark, that the experience of instructors generally has been that those students who have devoted themselves exclusively to the study of the Physical Sciences have made slower progress than those who have combined with them the study of the Classics. The remark has been attributed to Prof. Dugald Stewart, of the University of Edinburgh, that the most successful students in his department were those who had an accurate knowledge of the Latin and the Greek.

Some may plead the ennobling influence of Natural Science. In every department it displays the wisdom and goodness of the Creator. If studied with a right spirit, this is true. Yet, in Physical Science, the mind deals with matter alone, its properties and laws. In the Classics we can read the lessons of Divine Providence. We can hold communion with the spirits of the mighty dead, stand with Demosthenes on the Bema at the Pnyx, walk the groves of the Academy with the celebrated philosophers of antiquity, follow Cicero into the Senate and listen to his soul-stirring eloquence, and thus form a sympathy with mankind. And this sympathy who would exchange for all the emotions which the beautiful and sublime in nature can produce? In the words of a Latin dramatist:

"Humani nihil a me alienum puto."

* Donaldson's New Cratylus, p. 44, Cambridge.

The judgment of the most cultivated nations of modern times has been and is still in conformity with the views that have been expressed. The study of the Greek and Roman Classics was introduced into the system of liberal education which was adopted at the restoration of learning in Europe; and the experience of its benefits has secured its continuance. The Classics of Greece and Rome were included, in the schools, colleges, and universities of modern Europe, among those branches of study which they termed the "*humanities*," or "*literæ humaniores;*" and in the Scotch universities the professor of Latin is still styled "Professor of Humanity." This appellation is a proof that the founders of the modern system of education considered the classical writers as the teachers of the civilized world. They form a common bond, which unites the cultivated minds of all nations and ages together.

Some have condemned the study of the Classics on the ground of morality. It is not our purpose to hold them up as models of moral teaching, or to encourage an indiscriminate imitation of the sages of antiquity. Even under the benign, elevating, and sanctifying influences of Christianity, human virtue is too often found of a defective, weak, and stinted growth: how much more may we expect this to have been the case among those "who changed the glory of the incorruptible God into an image made like to corruptible man, and to birds, and four-footed beasts, and creeping things!" The only pure morality is found in the pages of inspiration: the only perfect model of virtue in the Founder of Christianity; and next to Him, in those who believe His doctrines, obey His precepts, and imitate His example. Yet among some of the ancient heathen there was much that was noble and elevated in character. We meet every where on the classic page with examples of devoted friendship, filial piety, reverence for the gods, unbending fidelity, self-sacrificing patriotism, and magnanimity. These virtues are commended and their opposites condemned. This demonstrates to us the supremacy of conscience and the universality of moral distinctions. It is known by all who have paid any attention to moral science, that a variety of opinions has existed concerning the theory of conscience—some holding the doctrine that it is a part of our original constitution, and others that it is the result of education. Now, to a careful reader of the Classics nothing is more obvious than the use of terms expressive of moral distinctions—distinctions founded, not upon legislation nor upon established custom, but referring to something absolute and immutable above and beyond man. They perceived these distinctions,

and felt and obeyed the impulses of conscience, though at variance with the examples of the deities whom they worshiped. Their gods were monsters of wickedness; but vice, armed with their authority, "found in the heart of man a moral instinct to repel her. The continence of Xenocrates was admired by those who celebrated the debaucheries of Jupiter. The chaste Lucretia adored the unchaste Venus." These examples afford an illustration of the following passage, written by an inspired apostle: "For when the Gentiles, which have not the law, do by nature the things contained in the law, these having not the law are a law unto themselves, which show the work of the law written in their hearts."

The best method of teaching youth morality, is not by arguments, rules, and demonstrations, but by examples, by sentiments that ennoble and elevate the heart. Such examples, we have already stated, are to be found in the Classics. Socrates was patient and forbearing, ardently devoted to the best interests of his fellow-men, according to the light he enjoyed; Xenophon was an example of modesty; and Plato, who acquired the epithet divine, displayed as much humility as many of his philosophic successors. Among the Romans, we have the simple republican manners of Cincinnatus, the unshaken constancy of Fabricius, the self-denying patriotism of Regulus, and the stern virtue of Cato denouncing the luxury and stemming the corruption of his age. These examples come down to us venerable by their antiquity, and on that account more efficacious. The examples of virtue among the moderns are so near to us and so much more familiar, that we are liable to look upon them in connection with their vices. Examples, that are constantly occurring around us, may be equally brilliant; but, like the light of the sun, which immediately surrounds us, they are obscured by floating dust, whereas, if we look to a distance, the particles of dust disappear, and we see, or we imagine that we see, the pure, unadulterated beam. Here, as in natural scenery, "distance lends enchantment to the view."

From examples it would be interesting to turn to the moral precepts transmitted to us in the Classics—precepts referring to civil, social, and religious duties. But we will omit these for the consideration of a more important point, at least a point of greater practical importance to the present age.

Classical studies furnish an antidote against the materialistic and materializing philosophy of the present day, promoted by a too exclusive devotion to the Natural Sciences, and thus indirectly aid

The demonstrative character of mathematical reasoning, which is one of its excellences, has not the happiest influence upon the mind of the mere mathematician, when moral subjects are presented for his consideration. Accustomed to his incontrovertible axioms, his exact definitions, and infallible conclusions, he looks for the same in moral questions. But they are not to be found; and if he does not turn skeptic, it can not be said that his mathematics saved him. On moral subjects, the student of language, other things being equal, has the advantage. All his reasoning in that department has been of the probable kind; and consequently he is better prepared to appreciate the evidence and reasoning employed in moral subjects.

To those who advocate the substitution of a more extended course of the Natural Sciences for the study of the Ancient Classics, the following considerations are submitted. They cannot accomplish their own purposes, together with those to be accomplished by the study of languages. Their relation to the mind is different; and it is important that every science should be considered in its relation to the mind, before the arrangement best fitted to develop the mental faculties can be determined. All science is in the mind, and its method is the same in every department; but each particular science has objects peculiar to itself, and differs from another, in its relation to the mind, according to the nature of its objects. The objects of Natural Science are the phenomena and laws of the material universe. To observe, collect, experiment upon, and classify these phenomena are the mental acts and processes employed in its pursuit. By such acts and processes inquisitiveness is awakened, the faculty of observation is cultivated, and habits of close attention are formed; but it seems to us that reflective habits are not cultivated to a corresponding degree. Where the external occupies so large a space in the mental vision, the internal must dwindle into comparatively small dimensions.

To form the mind to reflective habits and give it vigor and tone, it is necessary to throw it back upon itself, to observe its ever-varying phenomena, and to analyze its complex operations and emotions. Now these are found objectively in language.

"We find in the internal mechanism of language the exact counterpart of the mental phenomena, which writers on psychology have so carefully collected and classified. We find that the structure of human speech is the perfect image or reflex of what we know of the organization of the mind; the same description, the same arrangement of particulars, the same nomenclature would apply to both, and

we might turn a treatise on the philosophy of mind into one on the philosophy of language by merely supposing that every thing said in the former of the thoughts as subjective, is said again in the latter of the words as objective." *

The study of the Natural Sciences can not give the same kind of discipline only; but it can not give the same amount that the study of the Classics can.

These sciences may be taught in two ways, either systematically and in their full extent, or merely in outline and so as to convey some idea of their objects and leading principles. If they are taught in the former way, they are much too laborious as a mental discipline for the general student; if in the latter, they will have very little effect in cultivating the mind. On the contrary, in a majority of instances, they will lead to a dissipation of time and talents, unless pursued with other studies that require severer application.

It is not our intention to detract from the merit of the Physical Sciences. They form a noble study, well adapted to enlarge the mind and give it comprehensive views of the system of things. But it will scarcely be urged that the study of them can accomplish all their own ends, together with those of the study of language. And here it may be of importance to remark, that the experience of instructors generally has been that those students who have devoted themselves exclusively to the study of the Physical Sciences have made slower progress than those who have combined with them the study of the Classics. The remark has been attributed to Prof. Dugald Stewart, of the University of Edinburgh, that the most successful students in his department were those who had an accurate knowledge of the Latin and the Greek.

Some may plead the ennobling influence of Natural Science. In every department it displays the wisdom and goodness of the Creator. If studied with a right spirit, this is true. Yet, in Physical Science, the mind deals with matter alone, its properties and laws. In the Classics we can read the lessons of Divine Providence. We can hold communion with the spirits of the mighty dead, stand with Demosthenes on the Bema at the Pnyx, walk the groves of the Academy with the celebrated philosophers of antiquity, follow Cicero into the Senate and listen to his soul-stirring eloquence, and thus form a sympathy with mankind. And this sympathy who would exchange for all the emotions which the beautiful and sublime in nature can produce? In the words of a Latin dramatist:

"Humani nihil a me alienum puto."

* Donaldson's New Cratylus, p. 44, Cambridge.

The judgment of the most cultivated nations of modern times has been and is still in conformity with the views that have been expressed. The study of the Greek and Roman Classics was introduced into the system of liberal education which was adopted at the restoration of learning in Europe; and the experience of its benefits has secured its continuance. The Classics of Greece and Rome were included, in the schools, colleges, and universities of modern Europe, among those branches of study which they termed the "*humanities*," or "*literæ humaniores*;" and in the Scotch universities the professor of Latin is still styled "Professor of Humanity." This appellation is a proof that the founders of the modern system of education considered the classical writers as the teachers of the civilized world. They form a common bond, which unites the cultivated minds of all nations and ages together.

Some have condemned the study of the Classics on the ground of morality. It is not our purpose to hold them up as models of moral teaching, or to encourage an indiscriminate imitation of the sages of antiquity. Even under the benign, elevating, and sanctifying influences of Christianity, human virtue is too often found of a defective, weak, and stinted growth: how much more may we expect this to have been the case among those "who changed the glory of the incorruptible God into an image made like to corruptible man, and to birds, and four-footed beasts, and creeping things!" The only pure morality is found in the pages of inspiration: the only perfect model of virtue in the Founder of Christianity; and next to Him, in those who believe His doctrines, obey His precepts, and imitate His example. Yet among some of the ancient heathen there was much that was noble and elevated in character. We meet every where on the classic page with examples of devoted friendship, filial piety, reverence for the gods, unbending fidelity, self-sacrificing patriotism, and magnanimity. These virtues are commended and their opposites condemned. This demonstrates to us the supremacy of conscience and the universality of moral distinctions. It is known by all who have paid any attention to moral science, that a variety of opinions has existed concerning the theory of conscience—some holding the doctrine that it is a part of our original constitution, and others that it is the result of education. Now, to a careful reader of the Classics nothing is more obvious than the use of terms expressive of moral distinctions—distinctions founded, not upon legislation nor upon established custom, but referring to something absolute and immutable above and beyond man. They perceived these distinctions,

and felt and obeyed the impulses of conscience, though at variance with the examples of the deities whom they worshiped. Their gods were monsters of wickedness; but vice, armed with their authority, "found in the heart of man a moral instinct to repel her. The continence of Xenocrates was admired by those who celebrated the debaucheries of Jupiter. The chaste Lucretia adored the unchaste Venus." These examples afford an illustration of the following passage, written by an inspired apostle: "For when the Gentiles, which have not the law, do by nature the things contained in the law, these having not the law are a law unto themselves, which show the work of the law written in their hearts."

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Classical studies furnish an antidote against the materialistic and materializing philosophy of the present day, promoted by a too exclusive devotion to the Natural Sciences, and thus indirectly aid

the cause of morality and religion. Certain scientists are loud in their demand for *things* instead of *words*, as if words, and the ideas which they represent, were not things, and the most permanent things. The temples and sphinxes of Egypt are dumb, and leave us in ignorance of the past; but her hieroglyphics speak: her recorded words are the expositors of her antiquities.

This materialistic philosophy sees nothing practical nor useful, except in ores and metals, cubes and squares, gases and imponderable agents. It has a good representative in

> "Mammon, the least erected spirit that fell
> From heaven: for even in heaven his looks and thoughts
> Were always downwards bent; admiring more
> The riches of heaven's pavement, trodden gold,
> Than aught divine or holy else, enjoy'd
> In vision beatific."

And with great skill does the poet make him the leader of the fallen angels to "a hill" from which they "digged out ribs of gold."

Low utilitarianism is always thinking about digging gold; and it would convert every thing into a spade or pickax for that purpose. Such a one-sided and groveling philosophy must be opposed by one more comprehensive, elevated, and spiritual; and one of the best auxiliaries to such a philosophy is a broad classical culture. Men must be taught that whatever awakens noble thoughts and influences the heart for good is useful and practical; that the most necessary branches of knowledge are not, on that account, the most intrinsically valuable. Iron is used in a greater variety of ways than gold: it is more useful, but does not have more intrinsic value. Cotton is more generally used than silk: it is more useful, but it is not more valuable. Charcoal is more in demand than diamonds; but diamonds are more precious. We live in a world in which labor is required to feed and clothe ourselves, and for this purpose acquaintance with certain branches of science is necessary; but those branches, though of necessity more generally studied than others, are not higher in the scale of dignity: they are not of more intrinsic value. Arithmetic is not higher than Calculus; Geography than Astronomy; nor Chemistry than Metaphysics and Moral Philosophy. House-and-sign painting is not equal in dignity to landscape painting; nor is the study of Botany so elevated a walk of mind as that of language or poetry. Every one, of course, can not be expected to study Latin and Greek, the higher Mathematics and Metaphysics, literary criticism and poetry; but they are not, on that account, to be considered

useless and unworthy of the attention of the human mind; and it must not be imagined that other things, that relate more immediately to our present wants, can be substituted for them, and equally accomplish the same ends. This is the fanatical raving of a short-sighted, purblind philosophy, which can see neither beauty nor excellence in any thing that lies beyond the narrow circle that it has marked out for itself. Its views are all directed to some particular result, and with such intensity that it can see nothing else. It is wedded to a single idea, and all other ideas are discarded, out of respect to its favorite one.

The devotees of such a philosophy say, with Bacon, we want fruit: the object of all philosophy is fruit. Bacon did not mean, by fruit, crab-apples alone, nor pears nor peaches alone; but he meant all the rich variety that nature yields. Without figure, he meant all the legitimate results of literary research and intellectual investigation: he meant the fruit which our intellectual faculties are designed to produce. In the estimation of that philosopher, the Bread-and-Butter Sciences, as they are styled by the Germans, are not the only useful sciences. "Man doth not live by bread only."

*Vivere*
Non esse solum vesci aethere,
Sed laude virtutisque fructu
Egregiam satiare mentem.

## ARTICLE V.

# DIVORCE.

HON. N. H. DAVIS.

DIVORCE, in modern acceptation, is the separation of man and wife, by legislative enactment, or by judicial sentence or decree, authorized by statute.

A sentence of nullity is not, strictly speaking, a decree of divorce. It applies only to a void or voidable marriage.

The term "*putting away*," in Scriptural use, was limited in its signification to the act of one of the parties, and it does not always convey the idea of legal sanction.

It was not simply the *putting away* permitted by the Mosaic precept, which constituted the dissolution, or the setting aside, of the marriage, but it was the privilege or authority given to the woman put away, to be another man's wife. The *writing of divorcement* was the mandate, or, more properly, the requirement of the law, which secured the woman, as well against the further control of the man who had taken her to wife and put her away, as against the death-penalty for adultery, which she otherwise would inevitably have incurred, had she married another after being put away. Hence, we can not conceive it possible that the words "*some uncleanness*" (Deut. xxiv.) discovered after marriage, meant actual adultery; else we must suppose that the same penal law against adultery, so emphatically pronounced, was inoperative from the beginning, and had already failed at the time the precept was promulgated.

When polygamy was permitted by the custom of the Jews, it did not matter to the husband whether this *putting away* authorized by the law was in fact—as we use the term in modern times—a divorce or sentence of nullity, or whether it was simply a legal discharge from the obligation to support the woman, no longer agreeable in his house, as a wife. The effect was the same to him. The ancient custom of polygamy was of the authority of law, and the Jewish

husband was not disturbed by the question of marriage to another after putting away a wife; but it was all-important to the wife. Hence the law which suffered the husband, for specific cause, to put away a woman whom he had taken to wife, required of him a *writing of divorcement*, which released the woman from all obligations of duty to him. It certified that the woman was not his wife, and could therefore be another man's without incurring the death-penalty, which *surely* followed adultery.

In the course of time grave questions arose from the abuse of this privilege of putting away suffered by Moses. The law admitted of different interpretations. It was designed to mitigate, to some extent, the slavery of polygamy; but still, it left great power for cruelty in the hands of the hard-hearted husband, and was therefore open to great abuse. The school of Hillel claimed indefinite latitude of construction. The school of Shammai contended that the law limited the privilege to some special uncleanness to be discovered. Whether this uncleanness was post-nuptial or ante-nuptial is not satisfactorily settled; nor is it material for this argument—for Christ surprised the schools both of Hillel and Shammai, by declaring that the precept in question was not the law in the beginning, nor in conformity with the great design of the primitive law of marriage, but was suffered by Moses for their hardness of heart. It was indeed a temporary regulation, wisely adapted to the Jewish customs, but was not the law for the Christian Church, "For the Lord, the God of Israel, saith that he hateth putting away." It was a measure of relief for the benefit of the woman during the prevalence of polygamy. When Christ proclaimed to the world the law of marriage as it was in the beginning, polygamy was *condemned*, and the laws relating to it were no longer authorized. Under his teaching, polygamy came to be regarded by the Christian world as contrary to good morals. The enlightened judgment of Christian tribunals, which declared the common law, ceased to recognize it, and it was not tolerated in Christian countries.

This left the profligate no alternative but to fall back, under cover of the Mosaic precept, upon the license allowed to the Jews, and to adapt laws of divorce to the exigency.

It will be admitted that when a law tempts the criminal and rewards the crime, it at once becomes the *cause* of crime. It was for this, that Christ did not approve the first step toward the great crime of adultery, viz. the *putting away*, the tendency of which he foresaw and declared. It is for this, that the Christian

world never can be reconciled to the absolute dissolution of the marriage covenant for any cause.

The operation of this law of indissolubility proves its origin and its design. The highest civilization has its foundation in this law, as the lowest appears where this law is not acknowledged.

So far as civilization depends upon organized human agency, or upon what is called civil government, there are two kinds, which now distinctly mark the prosperous countries of the civilized world. Both are progressive, but there is a wide difference in their progressive development. One is conservative, the other is, in the English sense, radical. England and Scotland represent one, and too many States of the United States represent the other.

The difference is seen in the several departments of social, business, and political life, in the family circle, in the counting-room, and in the halls of legislation.

The highest civilization that ever has been reached by a nation on earth is that of England at this day. The conservative Christian sentiment which pervades and controls the whole nation, in her social, business, and political relations, written on the hearts of her people and embodied in the *unwritten* formula, called the Common Law, is a comprehensive definition or demonstration of real civilization, which every body, Christian or infidel, can understand.

The marriage institution, ordained of God as declared by Christ, and the family government laid thereon by a Christian Saxon people, constitute the foundation upon which that civilization rests.

Rigid adherence to the Word of God, in the matter of marriage, is the corner-stone of English family government, and of English society, and of the English type of civilization.

That civilization, by its common law, pronounces a valid marriage indissoluble.

It will be seen in the course of the argument, that the recent English statute of 20 and 21 Vic. c. 85, indicates no change of public sentiment in England upon the main point under discussion; and it is believed that this common-law doctrine of indissolubility will hold its power over the English mind just as long as England holds her high place at the head of civilized nations.

It is not pertinent to the argument to refer to the divorce laws of the different States in Europe and America. To England, however, we are indebted for the common law, and the common law reflects the spirit and meaning of the words of Christ, it is believed, in the matter of divorce.

In order, therefore, not to encumber the argument, all unnecessary references to laws of different States, and all collateral issues which do not affect the main point, viz. *the absolute indissolubility of a valid marriage*, will be avoided.

This point embraces the doctrine of the common law, and the argument will show that it is the law of Christ properly interpreted. It is designed to show, by the fatal effect on the morals of society of all laws of divorce *a vinculo*, that the marriage union when once fully consummated under the requirements of divine law (and what true man or woman would have it otherwise?) is an indissoluble union *prima facie*.

Furthermore, the fact that no marriage can be dissolved by common law, but its dissolution must be expressly authorized by the constitution and statute law of the State, admits the indissolubility of the covenant *prima facie*.

The common law of England is the common usage, the common sentiment and habit of thought, and the common practice growing out of it, sanctioned by the common sense of the nation, the evidence of which is to be found in the concurrent decisions of the wisest jurists in the country, from age to age.

It may therefore be said, that in point of civil and moral polity, common law is the most accurate exponent of the enlightened sentiment of every age in the progress of civilization.

The common law of England, by reason of its perfect adaptation to conservative republican government, was from the beginning and is now the declared law of every State of the United States, except the State of Louisiana.

Wherever the English language and English high moral sentiment prevail, English common law will be preëminent. It is, indeed, in democratic governments, the only practical and permanent safeguard against judicial and legislative corruption; because it is founded in reason and truth—can be traced to no particular era—is above all prejudice and partisan spirit, and keeps pace with the development, in practical life, of the profound wisdom and truth of the words of Christ.

In the English ecclesiastical courts, where it was pretended that the Church had proper jurisdiction, it was attempted to supersede the common law by the canon law; but the persistent efforts of bishops and clergy in this direction, only served further to excite the prejudice of the nobility and people against the canon law. The clergy gradually withdrew from this long-continued contest, leaving

in the hearts of the British nation a deep-seated distrust of the civil as well as of the canon law; in so far that even after the lapse of ages that which was good of the canon law was admitted with great caution and suspicion.

It is idle to say, therefore, that the common law yielded to canon law any common-law principle in the matter of marriage and divorce.

Common law is handed down to us by the decisions of eminent judges, who maintain and expound immemorial usage. When that usage is found to be "evidently contrary to reason" or "clearly contrary to divine law," it inevitably goes out as it came in, and ceases to be law; for sooner or later it will be seen that that which is not reason is not common law. The judges do not make the law. Their concurrent decisions are not the common law; but are only the *evidence* of what is common law.

When we bring to our aid, therefore, the authority of common law, in opposition to divorce, we stand on the high ground of reason, based upon the truth of the Word of God. Not only so; but when it is considered that in England the several supporters of common and canon law were bitterly antagonistic on every controvertible point, but on the general principle of marriage indissolubility were united, the authority of common law comes with singular power in condemnation of the low notions now prevailing in the matter of divorce.

Common law does indeed recognize as void, or voidable, a criminally fraudulent or illegal contract of marriage, and will, in certain cases, authorize a sentence of nullity; but never ventures to dissolve a marriage consummated in good faith by competent parties.

The efforts of Henry VIII. to effect a change in the policy of the English Government on this vital point signally failed. Had he succeeded in Parliament, or forced decisions in common law or ecclesiastical courts, the result would have been the same, so far as the principle of common law was involved. His edicts or decisions to-day would not be authority. The British Parliament, by special or private acts, two hundred years ago, did begin to override this established principle, and have continued from time to time to grant divorces, by special acts, under pressure of those in high places; but the great representative class of the people of England ever have opposed, and do now abhor divorce and subsequent marrying.

Even the recent English statute of 20 and 21 Vic. 85, which has been imposed upon the State for the benefit of the vicious few,

still retains substantially the main feature of the old statute law, *granting for simple adultery on part of the husband* only a judicial separation from bed and board. The adultery of the husband, unaccompanied by other crime, is not now, by the recent statute, sufficient ground for divorce *a vinculo*. The difference between adultery of the husband and adultery of the wife is on account of the spurious issue entailed upon the family by the adultery of the wife. It is not because adultery is admitted, even by the statute, to be sufficient cause of itself.

The common law does not yield even to this plausible evasion; and therefore we state with confidence that the fact that no marriage covenant can be dissolved by common law, but its dissolution must be expressly authorized by the constitution and statute law of the State, admits the indissolubility of the covenant; *prima facie*.

It is a misnomer to call marriage a contract. It can not be such between God and the parties united; for God makes no civil contracts with man. It is more than such between the parties themselves, besides the interest which the public has in it. It is a solemn obligation to abide by the conditions which the public demands and which God imposes. It is, in truth and in fact, a sacred privilege and trust conferred upon the parties, by the Creator, from which they can not be absolved by any authority less than the power conferring it. To this they do solemnly agree; the Christian world so recognizes it, and the common law can not sanction its evasion. Hence, to effect its dissolution, the necessity of first enacting statute laws, abrogating or overruling the ordinance of God and the established principles of common law. These statute laws, in some States, must be further authorized by constitutional provision.

It is assumed, however, by many Christian commentators, and by some Christian legislators, that some modification of this primitive ordinance of God is authorized by Christ himself; that the dissolution of the marriage union is allowed for one cause, viz. the cause of adultery. In this connection, adultery is construed by them to be one and the same with fornication.

It is not proposed, in this place, to say any thing of laws of divorce *a vinculo*, for other cause than adultery; but to pronounce them, without resort to argument, or to proof, utterly unworthy of Christian recognition. They have not the semblance of Scriptural authority, but are in positive and persistent opposition to every express or implied word of Christ on the subject of divorce.

Nor is it proposed to discuss the mooted point raised by the Greek word πορνεία in Matt. v. and xix. We, of course, avail ourselves of any legitimate conclusion drawn from our argument. It is true, if πορνεία, in the record of St. Matthew, refers to ante-nuptial incontinence, the marriage may be void or voidable at common law. It would simply be a question of fraud which might or might not vitiate the marriage, and not a question of the right of dissolution of a valid marriage. This view would, of course, be conclusive against divorce on Scriptural ground. The advocates of divorce can make no defense worthy of notice, upon any shadow of authority, other than the passages in St. Matthew of doubtful meaning, as we find it in the Greek. If, for the sake of the argument, we should allow that πορνεία and μοιχεία are convertible terms, it would not change the result on the main point under discussion. Christ himself disposed of this word of doubtful meaning, or did not regard it as affecting the main question, on two several occasions: the first as recorded by St. Luke; the second, when asked further of the same matter by the disciples, recorded by St. Mark, which concluded the controversy. The main question is the dissolution of a valid marriage. The ground is broadly stated, viz. that the absolute dissolution of a valid marriage, for the cause of adultery, is not only unauthorized, but is positively forbidden.

It is admitted by the highest authorities—that is to say, by all who acknowledge the supremacy of the Word of God on points of moral and civil law—that, if marriage dissolution is not authorized for adultery, a valid marriage can only be dissolved by death.

The character of the crime of adultery, *per se*, enters into the general question of public policy, and leads to some conflict of opinion among the advocates of divorce themselves. Whether adultery is or is not the highest crime against marriage, presents the subject under two very different aspects.

If adultery is not the highest crime against marriage, it can not be assumed that adultery is, *per se*, cause for dissolution; because there are other crimes against the marriage relation which do, in fact, not only defeat the purposes of marriage, but are quite as fatal as adultery to the unity of sentiment and life in conjugal love which is represented by the *unitas carnis*, or bodily union. These crimes, such as fœticide, infanticide, *procuring the wife's debauchment*, attempt on the life of the consort, are diabolical crimes, and worse than adultery, in any point of view. One of them, especially, is utterly destructive of the *unitas carnis*, and of every sentiment of affection;

and yet by the highest authorities among the advocates of divorce themselves, it is not pretended that they are allowed by Christ to be cause for dissolution of the marriage union.

On the other side: If adultery is the highest crime against marriage, that is to say, against the affections, the honor, the reputation, and the peace of the parties themselves and of the family, then adultery is a crime of such magnitude that it not only warranted the penalty of certain death, prescribed by the Mosaic law, but the reason and the necessity of the law were recognized by Christ, and the exception was allowed in obedience to that law; that is to say, the *putting away* was allowed in view of the immediate and inevitable death-penalty which followed conviction.

One or the other of these antagonistic propositions must be accepted by those who allege adultery as the exception.

In either case, the argument does not allow the alleged exception to the fundamental law of indissolubility. For one proves too little, and the other proves too much.

Furthermore, on the first point, as a matter of State policy alone: If adultery *per se* is not a high crime against the peace and dignity of the State, and does not destroy the unity of interest in the family circle, then it is not a crime of sufficient magnitude to authorize the Government to disturb the general and admirable law upon which society is founded, merely to meet a case, now and then, of individual hardship, occasioned by the folly of the parties themselves, which has no claim upon the law or upon the public sympathy; and *which, so far as relief from suffering and injustice is needed, can be reached by the common law.*

Government trifles with justice and truth, and hence with the public interests, when it ventures to intercept the wholesome and general operation of the common law, to provide for individual cases of indiscretion and folly of youth. In a practical point of view, therefore, the wretched plea of necessity is seen to be false.

In matters of conscience pertaining to civil as well as to moral government, Christ never leaves us to grope our way among abstractions and probabilities. He declared legal principles, affecting all society, on the vital subject of marriage rights and duties, with such precision, and such clear perception of the wants of society, as to challenge the admiration of the wisest jurists and statesmen of all time. And this is common law.

When, therefore, legislative assemblies, composed in great part of men who look only to material interests, and who have no proper

conception of truth or virtue, assume authority to set up a standard of morals, by statute law, for Christian observance, and when distinguished men of the Church acquiesce in this monstrous assumption, it becomes thinking men to stop at once and go back behind this modern invasion of the inalienable rights of society, and to reëstablish the truth as it came from Christ and is persistently held by the common law. This is a duty as well as a privilege of the humblest elector.

If the general reader, who is not supposed to be familiar with the technical meaning of the term *common law*, will accept our statement of facts, and think for a moment of the past and present greatness of England, he will discover that the common law brings to our aid, in this argument, as well the facts of English history as the grand principles of civil and moral law, in perfect harmony, which underlie that history.

While the great principles of the common law demonstrate by reason and practice the truth of the word of God, and are, in fact, founded on the teachings of Christ, its rules of evidence and interpretation for the discovery of truth are equally well founded. We propose, therefore, to seek the true intent and meaning of the words of Christ in the matter of divorce, by means of these admirable and unerring rules.

We assume, as admitted, that if a valid marriage can not be dissolved for the cause of adultery, it can only be dissolved by death.

We have shown that a valid marriage is indissoluble *prima facie*.

We propose to show that the words of Christ, interpreted by legal rules which are founded in reason and common sense, do not admit the alleged exception of adultery.

When Christ declared the law of marriage, as ordained by God in the beginning, and the *prohibitory* law which he deduced therefrom, viz. "What therefore God hath joined together, let not man put asunder," did he then or thereafter, in fact, or in words from which such a design can be legally or otherwise justly drawn, make an exception to the fundamental law prohibiting the dissolution of a valid marriage?

The exception is alleged to be *adultery* on part of husband or wife. By established rule of interpretation of statute law, especially when it is alleged as an exception, to limit or to impair the force of a fundamental law, the statute, as an exception, must be strictly construed. So here the same rule applies, and the burden of proof rests upon the party alleging the exception. It must be as clearly

shown that adultery is an exception to indissolubility as the contrary appears, not only in the body of the fundamental law, but as appears from the context, and from the uniform teaching of Christ, as recorded by St. Luke and St. Mark, and as believed and taught by St. Paul. This and much more would have to be done, even if all the presumptions arising from its operation in practical life were not against it; even if the common law did not unequivocally reject it. Will the rule be denied? Common sense admits the rule, as it does every other rule of common law.

This admirable and undisputed rule, especially in its application to penal statutes, is founded in wisdom and truth.

If statute laws, based upon an alleged exception to fundamental law, are to be held to indubitable proof of the design of the lawmaker, how much more essential is it to hold the alleged exception itself to the same simple and safe rule, both in a legal and a moral point of view!

Furthermore of the rules of common law, it may be stated that, while exceptions in derogation of fundamental law raise a doubt of the intention of the lawgiver, and throw the burden of proof on the party alleging the exception, exceptions totally repugnant to the body of the law itself are altogether inadmissible.

The application of these rules will appear in the course of the argument.

By a careful examination of the record of the words of Christ on the main question, viz. the right of the husband or of the wife to remarry, which it is alleged was permitted when the cause of putting away was adultery, it will be seen that the last communication of Christ on this, the main point, was made *to the disciples*, and recorded by St. Mark. (Mark x. 11, 12.)

It was subsequent to, and in explanation of the communication made to the Pharisees (St. Matt. xix. 9), in which the alleged exception appears. These words of Christ in St. Matthew, xix. 9, were not understood by the disciples. They did not understand how the husband could be deprived of his ancient privileges, and they immediately, when they went into the house, asked him for further explanation; and the answer was clear, concise, and unqualified.

This last communication (Mark x. 11, 12), as well as the equally plain and unqualified communication made to the Pharisees some time previously, recorded by St. Luke, xvi. 18, being in exact accordance with the fundamental law declared to the Pharisees, covering the main point of indissolubility, accumulates the presumptive evidence

on the side of the common law, and against the alleged exception, with such authority and power as to leave little room for doubt.

These last words of Christ on the main point expressly denounce the marriage of either of the divorced parties, without any reference, express or implied, to the alleged exception. These words were to the disciples apart from the Pharisees, and embraced another point not before named. It was the last communication of the Saviour upon the subject, was in conformity to the supreme or fundamental law, and did in fact simply declare that remarrying after putting away was adultery (a crime subject to the old law commanding the death-penalty). That old law was universally known, and it was not necessary to state it.

Inasmuch as the common law can and does give all relief necessary for the cause of justice and domestic peace, and for the good of society, any statute law authorizing divorce *a vinculo*, it is fair to assume, is only designed for the vicious; because it authorizes the vicious to override another established principle of common law, which affects deeply the moral aspect of the question. It *enables the criminal to take advantage of his own crime or wrong or indiscretion*—to reap a reward for his infamy, and to set at naught, at his will or pleasure, the chief design of the coördinate prohibitory law, as well as to accumulate his wives *ad libitum* under cover of law.

In practical effect, the alleged exception stands almost alone on this ground, and can not be received as of the force of law, or of a precept of Christ; because Christ could never have designed to give such license.

The wisdom and truth of the words, and of every act of the life of Christ, measured only by their practical effect on civil government, sustain this line of argument. If the facts and the rule of law are admitted as here stated, the argument thus supported can be rejected only upon the bold assumption—which the Christian will refuse to allow—that Christ gives greater latitude to sensualism by his precepts than does the common law, which claims to be founded in the very wisdom and truth and equity of those precepts when tried by the experience of ages.

The words of Christ are truth itself; and while we are allowed to place the records in intelligible connection in order to discover the truth, we dare not supplement the record by a single word: but we claim, if it can be interpolated at all, it must be allowed only on the side of the moral and legal presumptions of truth, which we have shown to be against the alleged exception.

Under the authority of common law—which recognizes the divine origin of marriage, and which is the wise adaptation of the primitive ordinance of God and of the precepts of Christ to practical life—we assert that in the most favorable view of the alleged exception, viz. in the light of an isolated passage unexplained by the positive law recorded by St. Luke and St. Mark, it does not come to us with the force of law or precept of Christ; because it is *an indirect inference drawn from a clause of doubtful application to the point in question*, to say the least; and because it presupposes that the husband could not have prosecuted his wife or her paramour for adultery, and is therefore repugnant to the body of the law, or passage itself, which, in declaring a crime, declares *ipso facto* the penalty for that crime under existing law.

It is pretended that the death-penalty for adultery was not in force at that time, because Christ did not condemn the woman taken in the act! A little reflection will satisfy the common reader *that this very transaction proves that the law was not only recognized by Christ* (which is sufficient for our purposes) *but was in force*, notwithstanding the depravity of the Jews at that time; and proves, moreover, the wisdom of the words of Christ in refusing to condemn. He laid the foundation of a law by that refusal, or recognized the equitable rule, which has been the common law of Christendom ever since, viz.: A party who demands, for his benefit or gratification, of equity or law, the condemnation of another, even for the crime of adultery, must come before the tribunal with clean hands himself. The pertinent question in the form of a proposition put to the accusers, settled the fact of their own guilt, and disposed of the question.

We take the liberty of quoting from a celebrated author,* who, in the estimation both of Protestants and Roman Catholics, now stands preëminent as an ecclesiastical historian. He says:

"Had any relaxation of the law come into vogue, we should have found some trace of a substituted penalty; for even by Roman and Athenian law, a man could kill his wife, if caught in the act, and so could her father, according to the new law of Augustus; else she was banished to an island. The Romans had certainly not forced their jurisprudence and penal code on the Jews, even when limiting their right of life and death. And nobody will believe that an ordinary Jewess convicted of adultery was banished to an island."

He says further:

'In all cases of uproar, high treason, and disturbance of public order, the Roman authorities would judge and punish; but in religious matters and what concerned

* Dr. Döllinger.

the law of Moses, full power was left to the Jewish authorities to pronounce and execute sentence of death."

"Nor is the attitude of Jewish authorities toward the apostles intelligible, except on the assumption of their full autonomy and power of life and death in religious matters. We read in Acts, v. 33, that the Sanhedrim in great wrath was resolving to kill them, when Gamaliel changed its decision, but not from any doubt of its power."

Much more could be quoted on this point,* but this is enough to show that the Jews were not restrained in this matter by their Roman masters, and that the Mosaic law was of the same authority as ever before.

If, in consequence of the depravity of the Jews, this great law, so necessary for the preservation of the institution of marriage, was at that time disregarded or treated as a nullity, can the Christian dare say—has he any authority for saying—that Christ overlooked this depravity, and compromised the principle set forth under authority of God and embodied in that law?

Did not, indeed, his emphatic declaration that certain acts constituted actual adultery, bring those acts under its penalty, and, to the mind of the Jews, reaffirm the law itself? This does not admit of question; for every body knew the penal law.

The exception, therefore, if adultery as alleged was allowed at all, was only allowed in view of that law. Any subsequent change of the law, if contemplated by Christ, leaves the exception which depended upon the law, unsupported, and to fall of course with the law. In any point of view, therefore, it does not affect the question of marriage indissolubility.

We come now to the examination of the record in detail, with the view of showing that the common law, on the point of marriage indissolubility, is the result of the plainest construction of the precepts of Christ; and that the public policy, of which the common law is always the highest evidence, is in perfect harmony with the common-sense interpretation of the words of Christ.

Let it be borne in mind that the common law allows a judicial separation of parties to a valid marriage, seeking protection, in certain aggravated cases; but never does, under any circumstances, allow the remarrying of either of the parties during the life of the other. It is not at all singular, from our point of view, that St. Paul and the common law should concur exactly. St. Paul is the only New Testament writer whose individual opinions we have of the intent and

* See Acts xxii. 4; also, xxvi. 10.

meaning of the words of Christ, beyond the record of the words themselves. St. Luke and St. Mark did indeed express their belief that the words "saving for the cause of fornication" did not affect the question at issue, by publishing the law without the exception.

The common law is the conclusion drawn by reason and by practical demonstration of its policy from the words of Christ.

If we trace the words of Christ from first to last, in his clear development of the whole subject, it will be seen that the common law has anticipated us, and that the conclusion is inevitable. We are, therefore, stating nothing new, unless indeed it is something new in modern times to examine this subject without prejudice.

We claim nothing but the privilege of tracing, if we can, and (if we succeed) of appropriating to our own use in this argument the same reasoning which resulted in the conclusions of common law.

The man who undertakes logically to set aside the principles of common law has not duly measured the magnitude of the undertaking.

It is a much easier task to prove the truth of the common law. That is all that we attempt to do.

Christ himself deemed this subject of marriage of sufficient importance to instruct, with the authority of Sovereign Lawgiver, not only the disciples and the Pharisees on several occasions, but he gives these instructions to the people at large, in the Sermon on the Mount. His declarations must be considered, therefore, in their proper connection. If so considered, it will be seen that the spirit and intent of the whole and of every part of his teaching is against the alleged exception to the fundamental law.

In the Sermon on the Mount (Matt. v.), Christ begins his instructions to the people, and says:

31. "It hath been said, Whosoever shall put away his wife, let him give her a writing of divorcement.

32. "But I say unto you that whosoever shall put away his wife, saving for the cause of fornication, causeth her to commit adultery: and whosoever shall marry her that is divorced (put away) committeth adultery."

The distinction is seen here between the simply *putting away*, which was the voluntary act of the husband, and the *writing* of *divorcement*, which was the requirement of law for the protection and benefit of the wife.

Christ does not here review this precept of Moses as critically as he does on a subsequent occasion. He manifestly designs to introduce the subject by reference to the Mosaic precept, and to pursue

it hereafter to the end of affirming and announcing the primitive law of indissolubility.

The Mosaic law of divorcement was simply *permissive:* allowing the husband to put away his wife; allowing the wife to marry another when put away. These were two distinct points, which he in the very outset severed; and it will be observed that he kept them distinct throughout. They were two distinct offenses, involving different degrees of guilt.

Previous to, and during the Mosaic dispensation, the right to a plurality of wives was not questioned. That right was not involved in the Mosaic precept: therefore the right of the husband to marry another after putting away a wife was not considered here: it was reserved for further exposition in its proper place.

The two points here, were definitely stated, and as definitely settled.

The *first* was decided: "But I say unto you that whosoever shall put away his wife saving for the cause of fornication, causeth her to commit adultery."

The *second*, involving a higher offense, and the corresponding death-penalty, was decided: "And whosoever shall marry her that is divorced (put away) committeth adultery."

When Christ subsequently placed the husband and wife on the same footing before the law, which so much surprised both Pharisees and disciples, did he relax this positive and unqualified decision against the remarrying of the wife, or in any way change it? On the contrary, he reaffirmed it on every occasion; and so positively and peremptorily that it can not be misunderstood. Will it be denied that he placed the husband and wife on the same footing? That would be to deny, not only the fundamental law of indissolubility, but the great and manifest purpose of all his teaching on this subject. If he did so place them, then what becomes of the alleged exception in favor of the husband?

If the records of St. Luke and St. Mark had never been given us, this would have been sufficient; for by what rule of law or common sense can a wife be held indissolubly to a union, and not the husband? This is a dilemma from which even the modern name of *status* can not extricate the advocates of divorce. This new term is a subterfuge.

Some States have enacted into statute law the legal absurdity of absolving the innocent party from the marriage covenant, and not the guilty; which may be kindly designed to cover retreat from an indiscreet marriage; but it is an evasion of the truth, to say nothing of

the common rule of law; for what is the *status* of the husband who is married and his wife unmarried?

This seems to be a sort of legal fiction, a weak attempt, under color of authority, to adapt the law of divorce to a condition of society totally different from Jewish domestic economy; for it is plainly apparent that the Mosaic precept was only designed to mitigate the condition of women during the prevalence of polygamy, and that Christ designed now to put an end to polygamy, and to bring the husband under the same law with the wife. That which he pronounced in this place to be adultery in the wife, was on a subsequent occasion pronounced to be adultery in the husband. This was the simplest possible way of reinstating the institution of marriage as it was designed in the beginning. And this simple way showed the wonderful, nay, the divine power of Christ, by a few intelligible precepts, in laying the foundation for the moral as well as the civil government of all society.

The two points here presented by his reference to the Mosaic precept were decided in few and conclusive words, which carry on their face the whole truth on these two points, viz. the man who puts away his wife from his kind care and keeping, unless she is a prostitute, causes her to commit adultery, or is the cause of her adultery; and he who marries a divorced woman commits adultery, or is an adulterer.

Not only is this decision absolute against the dissolution of a valid marriage, but it limits, by implication, the privilege of simply putting away (as the act of a single party) to the one cause of prostitution.

He does not expressly revoke the permissive law, but he shows why it must be inoperative hereafter, viz. that it causes and encourages adultery.

At another time, when he meets the Pharisees on the same subject, he exposes the cause of the law permitted by Moses, and reiterates the same decision on the two points: in nearly the same words on the first point, and in precisely the same on the second point. This second point was also decided in the same words in a previous interview with the Pharisees recorded by St. Luke.

We consider the passage of St. Luke xvi. with the records of St. Matt. xix. and St. Mark x., because it is not known precisely at what time the words recorded by St. Luke, as to the previous interview, were spoken to the Pharisees. That they were spoken (with some severity and with unmistakable authority) with reference to precepts

declared in the Sermon, appears by the connection of similar precepts with and immediately preceding this passage.

The passages from St. Matt. xix. and St. Mark x. have also direct reference to the Sermon. This is certainly so, because the two points of the Mosaic law permitting divorce, stated and decided in the Sermon, were the same two points here raised by the two separate questions of the Pharisees, viz.:

First. The right of *putting away* by the husband; which required a direct answer.

Second. The subsequent right of the wife, under the *writing of divorcement*, when put away; which also called for a direct answer.

Each received a decisive answer in this interview with the Pharisees. These two points embraced the subject-matter of the questions of the Pharisees. The subsequent marrying of the husband was incidental. It had received attention in the interview recorded by St. Luke, and did receive attention in its proper place here; and immediately, when he declared the same law for husband and wife.

Although these words, recorded in St. Matt. xix. and St. Mark x., were addressed to the Pharisees, they were designed for the Christian Church ever after, and the disciples as well as the Pharisees were profoundly surprised that Christ should, under authority of the primitive law, ordained of God from the beginning, deprive the husband of his ancient privilege, and bring him under the same law with the wife.

The law of Christ, recorded by the three evangelists, denounced the marrying of the wife, after she is put away, even by writing of divorcement, as *adultery*.

The design of this argument is to trace the meaning of Christ in the words of Christ. If it leads to the conclusion that Christ did recognize the enormity of the crime of adultery, and did recognize the justice of the penal law against adultery, while we dare not limit his mercy, we can not vary the import of his words on the assumption that he did not relax the severity of the ancient law, which commanded that the adulterer and adulteress should *surely* be put to death. That law, in all its severity, could only have been changed by a change in the character of the crime itself, in the mind of Christ. It could only have been disallowed by the words or command of Christ himself. We have no such word, or even the slightest intimation of such design.

To declare a crime, by common understanding declares the pen-

alty for such a crime, under existing law; otherwise, the whole penal code would be so encumbered as to be unintelligible.

It will be seen that Christ was giving unusual attention to the subject of marriage, and to the privilege of divorcement allowed by the Mosaic law, which did not belong to marriage as it was in the beginning, but arose from the permitted privilege of polygamy.

This question of divorcement was a point in civil law which involved the existence of the marriage institution, the importance of which no one saw as he did. The occasion called for the exercise of the functions of the legislator, and he spoke in his Sovereign capacity. He was, in fact, pursuing the subject begun in the Sermon, and proceeding step by step, as Supreme Lawgiver and Judge, to effect a radical change in the minds of men in the matter of marital rights. He designed to bring the husband under the same law with the wife, and that law he declared in the outset, condemning the wife's remarrying.

By tracing the institution to its source, and showing its great design, he exposed the narrow view of the sanctity of the institution embraced in the law of Moses, separating husband and wife, and giving privileges to the husband in the multiplicity of wives, which were no longer necessary, and which could not be allowed under his dispensation.

He therefore announced his decision, drawn from the character and design of the institution, and embodied it in the form of a positive *prohibitory* law: "What therefore God hath joined together, let not man put asunder." That is, husband and wife, being joined together by the ordinance of God, are not to be put asunder by the ordinance of man.

Let it be borne in mind that *putting away* and *putting asunder* are not the same. The terms in Greek are different, and of different signification. *Putting away* is the act of one of the parties, and referred, in the Mosaic precept, only to the voluntary act of the husband. *Putting asunder* is the act of a third intervening party, or the joint act of both parties under human authority. A man may *put away* his lunatic wife by sending her to an asylum for the insane, but that is not to *put asunder*. There is but one construction to be given to this supreme law. The terms of the law admit of but one construction. It is the positive and unmistakable command of Christ. Without a proper understanding of this distinction, no satisfactory conclusion can be reached. The Pharisees called the Mosaic precept a *command;*

Christ called it a *toleration.* It was tolerated while polygamy lasted, and no longer. *The law announced by Christ put an end to both.*

This fundamental law which Christ promulgated in Judea is the beginning and the end of the argument against divorce. It is the unalterable law upon which the common-law doctrine of indissolubility is founded. This law is admitted to be a positive command, and by its terms alone to cover the main point of indissolubility.

The records of St. Matthew and St. Mark are substantially the same on this point. There is no dispute about the positive prohibitory law. St. Matthew records the further words of Christ to the Pharisees, which, if they referred only to the putting away, and πορνεία is *post*-nuptial prostitution, are substantially the same as the declaration in the Sermon on the Mount, and do not conflict with any other words. But *it is alleged* that these words must be construed without limitation to permit the husband to remarry after putting away a wife for *adultery!* The next succeeding clause pronounces it (in language that can not be misunderstood) *actual adultery* for the wife to remarry after she is put away. These last words of the passage of St. Matthew are *precisely the same* as those used by St. Luke in recording the *previous* interview with the Pharisees on a different occasion altogether, and when an exception was not named or intimated: The exception named in St. Matthew did not touch the point decided. St. Mark, omitting altogether this passage of St. Matthew which refers to an exception, as did St. Luke, states that immediately after this, in the house, Christ declared it adultery on part of husband or wife to remarry after putting away.

Hence we find that the only positive clause in the disputed passage which covers the point at issue, the only clause which (if the passage is rendered as alleged) admits of no doubt, is against the alleged exception, and agrees with all the other records.

If, therefore, we do not insist upon an exception to the fundamental law which is repugnant to the law itself, and in derogation of the leading principle running all through the teachings of Christ on the subject of marriage, we can easily find the explanation of the ambiguous passage. It is absurd to reject that which is indisputable, because it seems to conflict with that which is ambiguous.

The disciples were surprised that Christ should strip the husband of his privileges under the Jewish usage, but they accepted his law and said: Then "it is not good to marry." Christ also corrected that error, and they received his explanation. Why may not we accept that which is positively declared, as does the common law, and

look for explanation of that which seems uncertain, in that which is certain?

The reasonable rules of common law simply reject the alleged exception, and that is enough. The explanation must be found in some other rendering of the passage. To insist upon this exception in favor of the husband is virtually to deny the whole, and to make the word of God, coming to us in the form and force of positive law, of no effect, because we entertain some vague or abstract notions of the *unitas carnis*, or of the seemingly unwonted severity of the death-penalty for adultery. These are abstractions of honest Christians, but the profligate, while he laughs at them, avails himself of their timely suggestion of a shelter for his depravity.

Thus it is that legislatures are using the Christian conscience and the religious prejudice and learning of the Church to upheave society, while the learned theologian is all unconscious that he is the cause of the monstrous iniquity.

Hence the necessity now of laying aside our prejudices and of giving due weight to the authority of common law. The common law commands or exacts nothing that is unreasonable. It authorizes a sentence of nullity of marriage in certain cases of ante-nuptial fraud or disqualification. It authorizes *putting away* in certain cases of vile post-nuptial misconduct—as adultery, for example—but is positive against remarrying after the putting away, in case of a valid marriage. It even excuses, and sometimes justifies, the slaying of the adulterer, if the slayer's own character warrants the plea of legal provocation.

If the exception, whether it be for ante-nuptial or post-nuptial prostitution, is confined within these reasonable limits, the disputed passage of St. Matt. xix. is consistent with the whole and every part of the New Testament on the subject of marriage; but if, against these sound rules of common law, it is insisted that the exception applies to the remarrying of the husband after he has put away his lawfully acknowledged wife, then it can only be done, with any appearance of reason, upon the ground of Christ's recognition of the penal law against adultery, which would be consistent with every record on the subject.

This construction would be admissible, and must be accepted in the last resort, because the rule of common-law interpretation is unerring, and Christ can not be inconsistent with himself.

The husband is permitted to put away his legal wife for adultery, if at all, in view of her execution, and that dissolves the marriage.

If she pays the penalty short of death, or by pardon or otherwise is released from the death-penalty, she stands, of course, to her husband as she did before conviction.

Will any one dare to say that Christ commuted the death-penalty to a paltry fine, or imprisonment, or any thing short of death? And yet no one denies that his mercy is unlimited. Can the husband say the living woman is not his wife, because she *ought* to have been put to death?

The law of Christ, as well as the common law, may be evaded, or abused, or misconstrued, or disallowed by individuals or by States; but that does not change the law, or the truth in which the law is founded. This does not preclude a simple and limited judicial separation.

It is seen, therefore, that *putting away*, and *remarrying* after putting away, are two different points in the policy of the law, and that the exception (even, as alleged, viz. of adultery) may reasonably, by implication, refer or apply to one and not to the other. It is an inference of law, an implication at best. An inference of law must be reasonable, and to be reasonable it must not conflict with positive law, else it is inadmissible absolutely.

The most prejudiced mind in favor of a loose construction of the law of Christ must admit, and does admit, that St. Luke, St. Mark, and St. Paul, and also St. Matthew (in his announcement of the fundamental law, and in his statement of the exposition of the whole subject by Christ), are all against the alleged exception (of adultery) to indissolubility of a valid marriage, or adultery as authorized ground for absolute divorce. That it is now used by the vicious as a *pretext* is shown by the history of divorce in all countries where divorce *a vinculo* is once allowed for that cause.

The common law, by rigidly adhering to the fundamental law of Christ, and to the manifest spirit and intent of his teaching, ascertained by simple rules of evidence, and of legal construction, rejects its claim to authority as alleged.

Admitting that πορνεία is here meant for adultery—admitting also for the argument the unwarrantable supposition that Christ overlooked or disregarded a great law which made adultery a capital offense, a law which represented God's abhorrence of the other still greater crime of idolatry (which is continually called the *adultery* of the Church)—admitting all this, the alleged exception can not be received as law when compared with parallel passages without resort to another unwarrantable supposition, viz. that St. Luke and St. Mark

have published for the law of Christ that which is not the law of Christ.

To say with Meyer that "the condition being understood, of course did not require to be expressed"—aside from its fallacy in point of fact, or as a rule of law—is to say that St. Luke and St. Mark, by an omission of an exception to indissolubility, have misled and agitated the Christian world for all time on the subject of the most vital importance in civil as well as moral government. Is the agitation not due to such modern expositors as Meyer instead of Sts. Mark and Luke?

To return to plain facts, and to the simple rules of legal interpretation. Here is an exception alleged to a positive prohibitory law. The alleged exception is at variance with the whole and every part of the record of the words of Christ, and can not be reconciled to the common-sense view of the subject by St. Paul; and yet we are told that this, the only disputed point, or the only point that could admit of dispute, was taken for granted by Christ when he declared the law in other places. Is this not an unauthorized liberty with the word of God? Is it warranted by any rule of law or logic?

No judge who is deciding on the validity of a great law, or any part of the law, or who is pronouncing his judgment of the design of a great law, ever takes for granted an exception to that law. Nothing is taken for granted that is not patent on the face of the law, or which is not universally admitted; much less does he take for granted that which subverts, or in any manner limits the force of the fundamental law.

In reviewing the Mosaic law of divorce, and expounding at the same time the great law of marriage as it was ordained of God, Christ was pronouncing judgment upon certain licenses suffered by the precept of Moses. That he should have in mind and take for granted the old and unquestioned law imposing the death-penalty for adultery is easily understood.

But when, after he had so clearly explained the origin and all the requirements of the law of marriage, as ordained by the Creator, he was asked by the disciples further of the same matter, that no lingering doubt might be entertained by them—and when he pronounced the final judgment in words that left no shadow of doubt with his disciples as to his meaning—that it should be supposed that he took for granted an exception which, by the words themselves and construction of the sentence, if noticed at all, *would have created a doubt*, is not the common-sense view of it, and therefore is inadmissible.

In declaring a great law, therefore, Christ could not have taken for granted that which could only be an exception (as now alleged) by forced construction, even if he had named it in his final decision. It is, of course, not denied that an inference drawn from a judge's decision upon a collateral point, may have the force of law; but it does not follow that the *dictum* of a judge, although true in itself as applied by the judge, is true in its application by subsequent expositors.

The two points here to which this inference of law is alleged to apply, are as different in fact as *putting away* a wife, and *marrying another* during her life, are in character of crime. The implied opinion by a judge may indeed have the force of positive decision on a collateral point, when it does not conflict with or in any manner limit positive law, previously or simultaneously or subsequently declared by the same judge; but on what ground it can here be assumed that it was taken for granted, in subsequent, much less in previous decisions (as in that recorded by St. Luke), can not be explained by any known rule of law or logic. Previous to the declarations recorded by St. Luke, the question of the husband's remarrying had not been raised. The seeming exception must therefore be explained away by the party alleging it; for it can not stand against the decision on the main point positively pronounced.

Thus it is seen that those who allege the exception have started from the wrong point. They have assumed that the exception is the fundamental law, and the law the exception. They have proceeded on the supposition that the fundamental law was *permissive* and not *prohibitory!* As if the law read: "What, therefore, God hath joined together, let man put asunder." It is not to be wondered at that they have involved the subject in confusion. Their earnest but unsuccessful efforts to arrive at a conclusion in their own minds, is proof of the false premise.

It is a sad comment on human wisdom, that grave differences on matters of civil government should arise out of the bitterness of religious controversy; but it has been so since the world was created. The religious element has always been used, more or less, by the unprincipled political aspirant. Hence, in England, more than a hundred years ago, British nobles procured from Parliament, by undue influence, the passage of private acts granting divorce, which the common law did not and can not allow. While the precedent has had little influence on the settled English public sentiment, it has been disastrous to the moral sentiment of the United States, especially in those States where the religious prejudice was strongest.

If, as contemplated by Christ, the distinction is observed between *putting away* and *putting asunder*, the question is relieved of much of the difficulty.

*Putting away*, the initial act of one of the parties, causes adultery. *Putting asunder*, the absolute separation of the parties, is only shown by the *remarrying;* and this is adultery itself.

*Putting away* and *remarrying* are the two points which Christ *severed* in the outset and *severally* decided.

A man may put away his wife in defiance of law. It is his voluntary act, which the law may or may not sanction, but it can not prevent. The law *can* prevent his remarrying, because marriage must have the sanction of law, else it is void as a marriage. The common law recognizes the right of *putting away* for adultery, in certain cases, but not of *remarrying*.

St. Luke and St. Mark recorded the words of Christ which covered the main question, and we must accept their records as complete upon the point referred to by them. If the records are placed together, each complete on the point named, and the whole considered as one, it presents the two points decided separately, but in perfect harmony. The exception, if it is adultery, can not apply possibly to the *remarrying* after putting away, during the life of the wife. It must be confined, as in the Sermon on the Mount, to the *putting away*, because it admits of a doubt, to say the least, is in derogation of all the positively declared precepts in other places, and is repugnant to the body and to the manifest design of the fundamental law.

It is rejected by legal construction, without reference to the death-penalty. It is rejected, of course, every body will admit, if the penal law against adultery was not, at that time, abrogated or repealed by the divine authority. This is not pretended. It could not be abrogated by any but divine authority. Neither the Roman procurator nor the Sanhedrim ever deterred Christ from declaring the law of God. The death-penalty for adultery stood unchanged; but very loose notions of the crime of adultery had obtained. In declaring, therefore, that henceforth to marry a divorced woman, or to marry another after putting away a wife, was actual adultery, he, *ipso facto*, declared the law against actual adultery. This is the rule, by common understanding. Every body knew that; but every body did not know in this case what constituted adultery. Indeed, none (not even the disciples) knew what constituted actual adultery.

That was the design and the conclusion of his whole teaching on

this subject, summed up in the decisive words which put an end to all controversy:

"Whosoever shall put away his wife, and marry another, committeth adultery against her.

"And if a woman shall put away her husband, and be married to another, she committeth adultery." (Mark x. 11, 12.)

This is the law of Christ. It reaffirms the fundamental law of marriage indissolubility in its integrity. It can not be overruled by any ordinance of man. It can not be avoided by any sophistry. It can not become obsolete in the Church without disaster. It is the common law of England and of the United States. It is indeed and in truth, when put to the test, the accepted law of the Christian Church.

## ARTICLE VI.

# THE DOMESTIC COMMERCE OF THE UNITED STATES.

HON. S. SHELLABARGER.

"IF I am too sanguine, in the views I indulge, it must be ascribed to my conviction that canals, railroads, and turnpikes are at once the *criteria* of a wise policy and causes of national prosperity; that the want of them will be a reproach to our republican system if excluding them; and that the exclusion, to a mortifying extent, will ensue, if the power be not lodged where alone" (in Congress) "it can have its due effect."—MADISON.

THIS Article is to be devoted to the consideration of the reciprocal interchange, by the people of these States, of the productions of this continent. The subject should be discussed in all its relations to the people—their institutions, laws, governments, and domestic and foreign markets.

The bare statement of the theme contains the disclosure that its adequate treatment is impossible within the limits of a single Article. This discussion will attempt no more than a presentation of a few of those views which seem most to demand present attention. One of these will show the failure of those upon whom the care of our commerce has been devolved by Government, to adequately realize and meet their obligations. In presenting this aspect of the subject it is not designed to express the opinion that, in this public administration, there has been a wholly inexcusable neglect. Nor would we intimate that our progress in the development of our internal commerce has not been exceptionally great. It is not even meant to say that the processes of legislative and judicial education, in the direction of caring for the productions of our industries and facilitating their interchange and sale, have been less rapid than, under conditions in which that education has gone on, the people were entitled to expect. No complaints of any kind would be here useful or proper, and none are designed. What seems eminently

needful now, is that the nation, and especially its rulers, should instantly comprehend the problem now upon them in caring for the commerce of this vast people—comprehend it in all its vastness and dignity; and should then *solve it.* To stimulate immediate search into this problem is the whole object of this discussion.

As introductory to the consideration of the claims of our domestic commerce upon the care of the Government, and also to the discussion of the powers and duties of the Government touching it, we must be brought to realize what this commerce is, in its magnitudes, present and prospective; what its relations are to the happiness and general welfare of the people; what to the prosperity of the various sections and classes of our industries; what to our foreign trade; what to the development of our vast natural resources; and what, in short, the relations of our exchanges of domestic production are to the entire material and political interests of the Republic. Only most general views, of course, are possible here.

Familiar and general as are the facts, they are most impressive, and are calculated to awe the reflecting and right-minded ruler, as he approaches the solution of this problem of wise and adequate governmental provision for our present and coming commerce.

First of all he realizes that he is, in effect, disposing of the affairs of a continent when he disposes of the material productions of this Republic. Then, that our continent is midway between Europe and Asia, where abide most of the human race, so that our position is the best possible for sending to these our surplus productions. Moreover, our new diplomatic and commercial relations with these hives of humanity are, day by day, opening up to us new markets for our surplus products, of limitless extent and of inconceivable value. Our natural capacity, also, for surplus productions, and for sending them toward these foreign marts, is inconceivably vast—so great that the description is wholly inadequate which has been left by that best historian of our Constitution:

"Nature has marked America for a great commercial nation—with sweep of Atlantic coast through twenty degrees, from Funda to Florida, broken into capacious bays and convenient harbors, and receiving the inward flow of the sea into great navigable rivers that stretch far into the interior—embracing all the climates found between the sterile region where summer is but the breath of a few fervid weeks, and the ever-blooming tropics, where winter is unknown—with soils of every variety—products suited to every market—proximity to the West Indies—nearly equal nearness to the East Indies—Southern staples demanded by all nations—fisheries capable of furnishing enormous additions to the wealth of the country—the West, with its vast internal waters and unequaled fertility, to be new States and abodes of millions of men."

Then to this he must add, in way of general survey of his subject, what renders this eloquent description by Mr. Curtis so inadequate and nearly obsolete, that since it was written we have added to that ocean border of which he speaks as sweeping through twenty degrees of latitude, another ocean front extending, with a slight break, through forty degrees of latitude—that this front is upon the Pacific, and opens to us the doorway to Asia, Australia, and all the islands of this ocean—a door and way so much superior, that already the commerce of Europe begins to traverse our entire continent in its way to and from Asia. Such, in outline, is the notion of magnitude which the American lawmaker gets of the affair upon his hands when he takes a general view of the field occupied by, and open to the commerce of this people.

Here then we start with our mighty subject upon us. Seen at large, its field is a continent. It is a new continent. It is a continent of capabilities and of natural wealth absolutely and literally inconceivable. It is a continent untouched and virgin as to nine-tenths of these natural resources—virgin as to, perhaps, three-fourths of its surface also. And then it is, as a refuge and home for our own and other civilized peoples, the last of the continents. Beyond *our* "Pillars of Hercules" there is nothing. Ours is the veritable ULTIMA THULE. In disposing of it we dispose of "the last of earth."

Such then is the dignity of this subject, seen with the telescope, and in larger aspects, as it is explored by the legislator in his search after the answer to the amazing question, Has the Republic, as such, any duty upon it touching this commerce of the people, the wealth, the productions of this continent; or has it not? Is the commerce of these States among these States, confided by the organic law to the pleasures of the Supreme Legislature of the Union or to railway presidents? WHICH?

But now we descend from this astronomical scrutiny of our subject, and take the more modest aids of the microscope—or such an apology for a microscope as the governments of the States and Union have supplied us with—for determining the extent and conditions of the products and commerce of the people.

Fortunately, in presenting details, approximations to truth are about as satisfactory in way of demonstration, in the argument we now make about the power and duty of the Government over and toward its commerce, as exact truth would be. Why exact truth is unattainable here will appear in a subsequent part of this Article.

The total value of real and personal property owned by individ-

uals, as distinguished from governments, was, in 1850, $7,135,780,228. In 1860 it was $16,159,616,068. In 1870 it was $30,068,518,507!

Observing the same ratio of increase, our individual wealth will be sixty billions of dollars in 1880; one hundred and twenty billions in 1890, and two hundred and forty billions in 1900!

The total products of the soil, including farms, orchards, and gardens, was, in 1870, $2,515,592,753. In that year we produced, of wheat, 287,745,626 bushels; of rye, 16,918,795 bushels; of Indian corn, 760,944,549; of oats, 288,107,157 bushels; of barley, 29,761,305 bushels; of buckwheat, 9,821,721 bushels; of rice, 73,635,021 pounds; of tobacco, 262,735,341 pounds, and of cotton, 3,011,996 bales. The total of cereals of 1870 was 1,629,027,600 bushels; of 1860 was 1,239,039,945 bushels; of 1850 was 867,453,967 bushels, and of 1840 was 602,326,353 bushels. The aggregate of the products of our manufactures in 1870 was $4,232,325,442. In 1860 this product was $1,885,661,676. In 1850 it was $1,019,106,616.

The recent report of the Select Committee of the Senate upon transportation routes discloses the following important facts touching the increase of our productions, consumption, and exports:

INCREASE OF PRODUCTIONS, AS COMPARED WITH INCREASE OF EXPORTS.

| Years from and to | Increase of Production. | Increase of Exports. | Increase of Home Consumption. |
|---|---|---|---|
| | *Bushels.* | *Bushels.* | *Bushels.* |
| 1840 to 1850, . . . . . | 251,928,665 | 2,752,686 | 249,176,059 |
| 1850 to 1860, . . . . . | 371,585,978 | 7,003,480 | 364,582,498 |
| 1860 to 1870, . . . . . | 389,987,655 | 34,335,386 | 355,652,269 |
| Total, . . . . . | 1,013,502,298 | 44,091,472 | 969,410,826 |

The following table, compiled from our Census Reports, and presented by the Senate Committee, is important:

PRODUCTION, HOME CONSUMPTION, AND EXPORT OF CEREALS FROM 1840 TO 1870.

| Year. | Production of Cereals. | Home Consumption. | Export of Cereals. | Exports, what per ct. of production. |
|---|---|---|---|---|
| | *Bushels.* | *Bushels.* | *Bushels.* | |
| 1840, . . . . | 615,525,302 | 602,326,353 | 13,199,049 | 2.1 |
| 1850, . . . . | 867,453,967 | 851,502,312 | 15,951,655 | 1.9 |
| 1860, . . . . | 1,239,039,945 | 1,216,084,810 | 22,955,135 | 1.8 |
| 1870, . . . . | 1,629,027,600 | 1,571,737,179 | 57,290,521 | 3.5 |

The total product of cereals in the United States, in 1872, was 1,656,198,100 bushels; and in the States of Michigan, Indiana, Illinois, Wisconsin, Minnesota, Iowa, Missouri, Kansas, and Nebraska, was 1,028,987,300, or about sixty-two per cent. of all the grain produced in the United States in that year. Of this, 156,228,000 bushels were wheat, of which these States consumed but 85,716,512 bushels, leaving an export from these States of 70,511,488 bushels of wheat. These States produced, in 1872, 700,000,000 bushels of corn. The total quantity of grain shipped to market in 1872, from the Western and Northwestern States, was 213,021,426 bushels, of which 74,360,778 bushels were exported to foreign countries, 41,132,225 to the New England States, 63,744,897 to the Atlantic States south of New England, and 33,783,526 to the Gulf States.

These enormous shipments constituted only about fifty per cent. of the freight carried from the West to the East and Southward. The same report finds, as the result of the fullest investigation, upon sworn testimony and from exhaustive analyses, that if proper and perfectly practicable provision, by the Government, for increasing and cheapening the means of transportation were made, *it would lessen the cost thereof fully fifty per cent. below the average of existing and past rates of freight charge each way; and would, at this time, nearly or quite double the aggregate of shipments and productions, which are now prevented by these high rates of charge.*

The average cost of transporting a bushel of wheat from the Mississippi River to New York, by rail, is found to be 50½ cents per bushel, and by rail and water to be 43$\frac{6}{10}$ cents. This Senate report finds the average cost, in 1872, of transporting a bushel of wheat from St. Paul, by New York, to Liverpool, was 67½ cents; and that 28 cents per bushel may be saved by improving the Mississippi route. It finds that the actual shipment of grain, in 1872, from Western States, was, in 1872, 213,000,000 of bushels, and that the saving upon this alone, had we the facilities for transportation which are easily attainable by us, would be from 20 to 25 cents per bushel, or, at the rate of twenty cents, would be about $42,000,000, in that single year, upon that grain alone which was actually shipped. But to this must be added an equal amount, or nearly that, which would be saved on the transportation of return commodities Westward. And to this again must be added the increase of production and of shipment which would instantly result from the cheapening of the cost of transportation one-half, and from the resulting opening of the markets of the world to us; which would probably, at once, double our production and

shipment. To this again the Committee adds, for the eight Northwestern States of Indiana, Illinois, Iowa, Minnesota, Wisconsin, Missouri, Kansas, and Nebraska, $1,100,000,000, as the instantaneous enhancement of the value of the 55,841,000 acres of land now cultivated in these States. This aggregate is obtained thus: They add ten cents per bushel to the grain produced on these acres, which allows one-half of the increased value of the grain resulting from 20 cents being saved on cost of transportation, to go to the consumer. They estimate the production of the land at 20 bushels per acre, and thus get $2 per year as the enhanced annual value per acre, equal to twenty dollars per acre in the actual value of each acre.

But even this is but a tithe of the beneficent results to be derived from making suitable provision for the transportation and interchange of the products of our industries. To these, the Committee remind us, are to be added

"The increased value of farms in other States, the increased value of unimproved lands, the enhanced value of cotton plantations, the benefits to accrue from reduced cost of movement of the products of the mine, the foundery, the factory, the workshop, and the thousands of other commodities demanding cheaper transportation."

And then to all these must be added the considerations which grow out of our necessities, connected with our grain market in other countries, eighty per cent. of which foreign market is in Great Britain.

The grain-producing nations which compete for the markets of Europe, and especially of Great Britain, are Russia and the United States.

By reason of the recent and great improvement and cheapening of transportation from Russia to England, the United States so far lost the advantage which we heretofore held, that the five years ending in 1864, contrasted with the five years ending in 1873, showed that our export of wheat in those years, compared with that of Russia, was as follows:

IMPORTS OF WHEAT FROM RUSSIA AND AMERICA, FROM 1860 TO 1864, COMPARED WITH THE IMPORTS FROM 1868 TO 1872, INTO GREAT BRITAIN.

| 1860 to 1864. | | 1868 to 1772. | |
|---|---|---|---|
| From | Wheat. | From | Wheat. |
| | *Bushels.* | | *Bushels.* |
| Russia, . . . . . | 47,376,809 | Russia, . . . . . | 117,967,022 |
| United States, . . . . | 127,047,126 | United States, . . . . | 116,462,380 |

This increase of Russian exports, in this single commodity, was 70,590,213 bushels in five years; whereas our *decrease*, in the same commodity during the same years, was 10,584,746 bushels. We must also remember that Russia has not yet, but soon will adopt the handling of grain by "elevators," that the cost of ocean transportation is diminishing, and that our wheat-fields are receding from their principal markets along our seaboard. All these considerations fully justify the conclusion of the Committee that when Russia "shall have driven us from the markets of Europe, she will become our active competitor in the markets of Boston and Portland, if cheaper means of internal transportation be not provided."

The Committee finds an equally alarming state of affairs in regard to our production and export of cotton. This condition it attributes, in part, to the stimulant given by our late war to the production in India; but also attributes, in a large part, to the effect of high cost of transportation of breadstuffs to the Cotton States, and the resulting decrease of production. The following table gives hint of the causes of this alarm.

RECEIPTS OF COTTON IN GREAT BRITAIN IN 1860 COMPARED WITH 1872.

| 1860. | | 1872. | |
|---|---|---|---|
| From | Cotton. | From | Cotton. |
| | *Pounds.* | | *Pounds.* |
| United States, . . . . | 1,115,890,608 | United States, . . . | 625,600,080 |
| All other countries, . . | 275,048,144 | All other countries, . . | 783,237,392 |

To these facts now presented, must be added others equally important in forming an estimate of the condition and demands of our internal commerce and productions. The people of this country have struggled for the means of transportation and of life, by increasing the number of their railroads until their aggregate reaches about seventy-two thousand miles—more than half of all upon the globe. They did this under the delusive hope that *competition* between them would lessen the cost of transportation to the lowest just and compensatory rate. In this struggle they have, as remarked by the Committee, "imposed upon themselves grievous burdens of taxation;" and find that "instead of bringing into the field a competitor, they have not only doubled the power with which they have to contend, but that they have quartered upon themselves a

new and an expensive organization which must be supported from the products of their toil." Moreover, during the last ten years "a spirit of railway aggrandizement has taken possession of the strongest companies, since which the work of centralization and absorption has progressed without a parallel in the history of the world." They find these monstrous aggregations of money-power now such as not only to be *able* to banish from the land all competition, but practically to have banished it. They discover them, in fixing their rates of charge upon the products of their toil, meeting in a common conspiracy, and asking, not what is just and compensatory, but What will the property bear? They exhibit these money-powers able and ready, as we have seen, not only to tax their products double that reasonable rate to which the cost of their transportation is readily reducible by available competition, but also subsidizing legislatures, courts, and press, for the purpose of perpetuating and augmenting their bad ascendency. The spectacle presented by what has now been stated, and which shows a great people, and their productions, and their very institutions, in the thrall of a few money-monsters in our land, is yet incomplete. The people must realize other immense facts which enter into the case. Among them are such as these: That at one end of these lines of transportation, untold millions of bushels of bread, actually produced, are rotting in the fields or consuming in the fire, and the labor which produced it goes uncompensated and despairing. The mighty capabilities of all the vast interior go undeveloped and languishing. While, at the other end of these lines, the single State of New York in a single year —1870—expends $911,855.15 in feeding 160,932 occasional paupers, or in feeding 26,152 paupers on an average the year round, at an outlay of $2,661,385. Massachusetts feeds 8,036, at an outlay of $1,121,604; and the United States supports 116,102, at an outlay of $10,930,429. To these hundreds of thousands who are delivered by public charities from actual starvation, must be added millions more of poor, who are constantly pressing upon that narrow line which separates them from these recipients of public charity. These are perishing from a lack of bread in "a land flowing with milk and honey."

All this is occurring in a country whose extent and resources, if appropriately developed, and benignly governed, is capable of supporting, in comfort, a population nearly as dense as that of Belgium, a population which is to ours now, in average numbers, as twenty-five is to one.

In leaving, as we do now, this statistical view of our internal trade and production, it is proper to say that the purposes of the presentation here made have not been to indicate that the defects of our condition are wholly, or even mainly, attributable to the wrongs of railroad administration; or that these organizations are to be warred upon as such, or deprived of their due proportion of reward and protection. On the contrary, our whole object has been to get before the mind the complete and *national* character of this problem of inter-State transportation, to indicate the supreme magnitude of the subject, and to appropriately premise the consideration of the jural and economical principles which the rational solution of that problem must involve.

The facts at which we have now glanced are but meagerly and inadequately exhibited. But imperfect as our statement is, it is completely sufficient to show that this nation stands to-day in the very presence of the most stupendous question which, among the material affairs of the world, ever challenged the courage, besought the wisdom, and demanded the solicitude of any people. It is a question which touches now and vitally every material interest of forty millions in these States. It will touch the interests of two hundred millions before this generation shall pass away. It will dispose of the resources of a country governing nearly one-half of the north temperate zone which is inhabited by civilized men. And this in a territory possessing two-thirds of the globe's fuel—that natural force employed in the industries of all enlightened States. This problem also gives value, or extinction, to the products of the hundreds of millions who are speedily to inhabit this land, unless its institutions shall miserably perish. It will either fail in its possibilities, or send bread to the multitudes who die from want in older worlds, for which God and nature have made ours the granary. We must decide whether we are in the future to be, what we have been in the past, a refuge for the oppressed and toiling of other lands, and who are, to-day, crowding the ships which brought them hither in escaping from regions unable to provide channels for their productions either to their own markets or those beyond the sea. This problem will, most likely, decide the fate of the Republic, and of republics, by deciding whether the Union of these States is, in matters common to all the people, one beneficent power over all, able to cherish, develop and defend these common interests, and to secure speedy and cheap transportation for their productions to the markets of the world: or whether that Union is, on the other hand, a thing of evil,

which has bound, in discord, jarring and hostile States, each one unable to control the channels of its own commerce to marts outside of its own borders, and unwilling to give just transit to the commerce of other States through its own territories.

Such, let Americans be assured, is the question of "cheap transportation," thrust now upon our politics and the action of our law makers.

Its character and dignity being realized, we are made ready to enter upon the next stage of the inquiry. This part of the discussion we would fain address, if we could, to the legislators of the Republic. We would address them with deference, and with that realization of their responsibilities and of the vast difficulties of their place, which come from having been long of their number. But still we would address them with confidence that what we now add is disclosed by the plainest teaching of history, the most obvious principles of government, the most settled doctrines of our Constitution, and the easiest deductions from our present condition.

The immediate question reached is, What are the powers and what the duties of the Federal Government toward this "commerce amongst the several States," the condition, wants, and future of which have just been noticed?

Here we venture to record a prediction. It is that it will soon be discovered by us all, that the fundamental elements of the Federal law for the rescue, development, and defense of the productions and the inter-State commerce of this country have already, and in this year of grace 1874, become part of the fixed and irreversible resolves of the American people.

All great and secure governments, like Topsy, are not made. They grow. The statutes which in every country and age are their framework, are never "passed." They come. We could write down here no truths more familiar, and, with students of government, more commonplace, than these. And yet, because familiar truths, they are to be everlastingly remembered. Since, however, they are everlastingly forgotten, we venture to repeat them. In the matter we are presenting, their careful recollection may be useful. In countries even moderately free, institutions can not be guaranteed before their time; so neither can they be long defrauded out of their coming. There never yet was any enlightened people in whom, among whom, and over whom there was not one grand, slow-moving, aggregate thought—a force—a spirit—caused by nobody and yet by every body; voiceless, but the sum of all voices; nameless, but bearing

every name; silent, but speaking in all whispers and in all storms; having no magistracy, but wielding all scepters; holding no courts, but pronouncing all judgments; keeping no armies, but deciding all wars; having no parliaments, but making all laws. This incomprehensible but all-comprehending Presence indicates its duration, as well as its resistlessness, by the song of the "babbling brook," and reminds States that

> "Men may come and men may go,
> But I go on forever."

It has not very ostentatious "ways," but they are very impressive. Its formulas are few, but fearfully suggestive. One is, "The mills of the gods grind slow, but fine;" one, that "man proposes, God disposes;" one, that "if I may make the songs of the people, you may their laws;" one, that "bayonets think;" one, that "war legislates;" one, that "revolutions go not back;" one, that "everybody knows more than anybody."

The author of Civilization in England wrote severely, but profoundly, when he said that

> "The history of every civilized country is the history of its intellectual development, which kings, statesmen, and legislators are more likely to retard than hasten; because, however great their power may be, they are, at best, the accidental and insufficient representatives of the spirit of their time, and because, so far from being able to regulate the movements of the national mind, they themselves form the smallest part of it, and, in a general view of the progress of man, are only to be regarded as the puppets who strut and fret their hour upon a little stage; while beyond them, and on every side of them, are forming opinions and principles which they can scarcely perceive, but by which alone the whole course of human affairs is ultimately governed." . . . "Every system must fall if it opposes the march of opinions." . . . "The vigor of public opinion is not exposed to casualties; it is unaffected by the laws of mortality; it does not flourish to-day and decline to-morrow; and so far from depending on the lives of individual men, it is governed by large general causes, which, from their very comprehensiveness, are in short periods scarcely seen, but on a comparison of long periods are found to outweigh all other considerations, and reduce to insignificance those little stratagems by which princes and statesmen think to disturb the order of events and mold to their will the destinies of a great and civilized people." . . . "In trifling matters, these may temporarily decide upon the laws, though, as constant changes in the laws of every country abundantly prove, it is also done without benefit. But in reference to those large and fundamental measures which bear upon the destiny of a people, such anticipation, as well as attempts at retardation, are worse than useless—they are injurious."

What large and fundamental principle of government or measure of legislation which bore "upon the destinies of a great and enlight-

ened people" was ever evolved from a mere individual consciousness, originated in a parliament, made possible by a harangue, first enacted by the ayes and noes of a senate, or long defeated by being put upon the table? The proofs of these truths, as well as their supreme practical moment, lie about our feet as thick as the leaves in history. Of the impotence of a king, a ministry, or a parliament, in resisting the march of the aggregate thought of an age, the lawmakers of all subsequent ages will find a startling indication in the administration of the second Charles. That prince, besides being a voluptuary, a drunkard, a libertine, and hypocrite, without shame, sensibility, or honor,

"Without the morals of a Christian, and almost without the feelings of a man, managed to fill the government with confusion, weakness, utter demoralization, and crime. Without a single statesman, save Clarendon (and him they impeached and exiled), among his ministers, his government, looked at only in the character of the rulers and their foreign policy, we must pronounce the worst that has ever been seen in England."

And yet, during the quarter of a century of that profligate and disastrous reign, and generally against the choice of the king, more laws were enacted protective of the great fundamental rights and interests of society than had been passed in "any equal time during the twelve centuries the English had occupied the soil of Britain." Then was abolished the writ for burning heretics. Then the taxation of the clergy by Parliament instead of by themselves was enacted. Then the *ex-officio* oath was abolished by which the Church held the power to compel suspected persons to testify against themselves. Then the House of Lords was compelled to surrender original jurisdiction in civil suits. Then the same House was compelled to surrender to the Commons the power of originating money or tax bills. Then the scandalous prerogatives of purveyance and preëmption were destroyed. Then was enacted the famous Habeas Corpus Act, since imitated in all free States, and which made English liberty as secure as it can be made by law. Then was passed the "Statute of Frauds and Perjuries," also copied into the statute books of all enlightened States. In this reign an end was put to general impeachments, that "engine of tyranny, with which powerful and unscrupulous men had frequently ruined their political adversaries." In it is located the cessation of those laws which restricted the liberty of printing, and the foundation was begun of that great "public press," which was consummated in 1695, by an Act, "the history of which can be but imperfectly traced in the archives of Parliament,

but which has done more for liberty and for civilization than the great Charter or Bill of Rights;" and in this reign was destroyed also those drifts which came down from feudal barbarism—the "military tenures," the "court of wards," "fines for alienation," "aids," "homages," and "escuages." How was it that all this was done in this worst reign of English history—when the king was a profligate, and, as to intelligence, an ass—when the cabinet was the "Cabal," whose members were in most part a copy of their king, and were engaged, at Dover, in treaty with the French for the sale of British liberty for "thirty pieces of silver"—when the morals of Parliament were such that it became as notorious that there was kept at the Treasury a market for its votes, as that there was a market for cattle at Smithfield; and when Caermarthen, Clifford, and Danby purchased the orators of the British Senate at rates not greatly in excess of the present price of British bullocks? That this wondrous legislative revolution should have been wrought at such a time and in the teeth of such ministers, kings, and Parliament, seemed for ages an enigma even to the writers of history; but its solution is now ranked among the elementary lessons of school-children. The plain fact is that, aided by the growing power of the press, and indicated in the growing intelligence of the masses, Bacon and Locke and their associates and successors in philosophy, Jewel, Hooker, and Chillingworth and their associates in religion and church politics, Boyle and Newton and their associates in science, Selden, Coke, Hampden, and Sidney and their associates in politics and government, and Cromwell and his compeers in the Parliament the field and the administration, rendered, not possible, but inevitable, not only the legislative revolution which illustrated this bad reign, but they and their sequences upon popular thought rendered as inevitable as the judgment of fate, and as changeless as the currents of the Gulf Stream, every other law of every other age, upon which are rested the protection and defense of the material, social, political, and religious rights of the masses of society. So certain, ascertained, and constant have these dynamics of our political economies become, that, it being given that a particular measure will advance the interests of society, mathematics may almost calculate the period of its enactment into law with as much certainty as Clairaut could attain in foretelling the return of Halley's comet; and a British historian did foretell the emancipation of the Jews and their admission to Parliament, long before Rothschild took his seat in the Commons amidst the cheers of the House, with the same certainty of statement which now marks

the orders of governments in the issuance of commands to their navies to witness the approaching transit of Venus.

In our own country how resistless and how sublime is the majestic march of that aggregate thought of the age! And how certain and how truth-telling have been the harbingers of its awful decrees!

Take, from the scores of memorable examples of the results of that resistless force (which examples, indeed, make up the body of all our great laws, organic and statutory), the abolishment of slavery, and the laws for the defense of the emancipated. Only fourteen years ago, that monster—hoary, and, as Mr. Clay declared, "sanctified" by a duration among us of more than two hundred years—sat upon the breast of the Republic, intrenched behind the defenses of both the Constitution and the laws, and justified by the doctrines and teaching of a profaned religion, a desecrated literature, servile politics, and a polluted morality; and in the audacity of its imagined strength and security, it repeated to itself the boast, pronounced during eight centuries over a production of Roman genius and power, "*Quamdiu stabit Colyseus, stabit et Roma; quando cadet Colyseus cadet Roma; quando cadet Roma cadet et mundus.*"

But long before this hour of slavery's supreme triumph, at which the American Congress had voted to make, by amendment of the Constitution, slavery as eternal and indestructible as our mountains, one who read the mind of this people and the moral qualities of the age more profoundly than that Congress did, had uttered a single sentence more enduring than the Coliseum, and more resistless than the vote of Roman or American senates. He said, "A house divided against itself can not stand." . . . "The PUBLIC MIND will rest only in the confidence of slavery's ULTIMATE EXTINCTION." For this that PUBLIC MIND made him President, gave him armies, "rested" in that "ultimate extinction," and citizenized the emancipated by a succession of decrees of whose moral grandeur the first statesman of England has recently said they have neither a parallel nor proximate in human history. And now, while the two Houses of Congress bandy and toy between them the measure which is to secure equality of "civil rights" to the citizenized slave, there is scarcely an intelligent man in the Republic who does not know the measure to be already a decree as irreversible as a law of the "Public Mind." Apply these dynamics of all modern civilization—these sure-moving forces of the all-mastering thought of the age—to the subject-matter of this discussion, and what solution of our

problem do we attain? Who that thinks shall doubt here? We have glanced at the conditions and the spectacle of the problem. We have seen the hives of our common humanity in easy reach of us, but outside of our coasts, starving and clamoring, and reaching out skeleton fingers for our bread, but that bread denied because some diabolical element of our Constitution is imagined to forbid its sending! We have seen the millions of our own men, women, and children "having bread enough and to spare"—and to burn—but in rags for want of those necessities of life which those starving abroad are eager to exchange for our food—imploring their Government to permit the exchange; and have heard their Government, in the very wantonness of mockery, reply by holding weekly debating schools in Congress of Saturday afternoons, arguing the "vested rights" of railway monopolists, under which they are licensed to pauperize the races of men and impoverish or dwarf a continent!

We have seen our country endowed with two-thirds of the fuels of the world, two-thirds of the ores of the world, nearly all the virgin soils of the north temperate zone; with natural facilities for home and foreign exchanges of production unmatched upon the earth, and to occupy, possess, and develop which population is crowding from all other lands, and augmenting in our own, until the demonstration is reached that, at the same rate of progress, this generation will end with two hundred millions here; and we have asked, May these occupy, possess, develop, and, without unjust impositions and burdens, exchange? We are answered that our Government about all this and these has no care; and if she had, some infernal element in her Union has put upon her an eternal mandate never to "take care"!

Has he learned the alphabet of history who thinks that this people will, for another decade, permit either a party or a constitution or a code of laws to exist which fails to take care that interests and values like these shall be by their own Government respected and defended?

But there is in our fundamental law no such pernicious element as that which deprives the common Government of the power and duty to regulate and defend the commerce of the entire people. If there were such, the framers of this Union would have made themselves the architects of a monster, having no similitude in all the lists and lines of governmental structure disclosed by human annals. The regulation and defense of the commerce of a nation, and, to that end, of all the channels and instruments of that commerce, have been and are,

by the unanimous consent of all public writers, economists, and jurists, classed among the fundamental and highest prerogatives of government; and the unvarying practice of all enlightened nations has placed them there. This unanimous teaching, this undeviating practice, are simply the inevitable deduction and logic of one of the most rudimental axioms of the science of government; and which an eminent publicist has expressed in these words, applied to a mere instrument of commerce: "Roads form a primary element in the material advancement of a nation, being essential to the development of the natural resources of the country." The law merchant, the courts of admiralty, the codes of commerce, the consular systems, the commercial codes of international law, the organic provisions in defense of trade, the rules establishing rights of eminent domain for the creation of channels of internal trade, the exclusive dominion over navigable waters, and scores of other characteristics, are the unmistakable *indicia* of how universal and vital are the relations of all governments to the trade and commerce of their people. If, therefore, the contrivers of our written constitution had made it without the control over that portion of the commerce of the people which is external to individual States, or is "amongst" several of them, and therefore wholly beyond their several powers, as States have no authority beyond their lines, they would have left the whole subject-matter of the national or inter-State commerce, as distinguished from that within a State, unprovided for and outside of the pale of governmental jurisdiction of any sort whatever.

Considered upon general principles, and independently of the text and history of the Constitution, such a solecism attributed to that Convention, would be inconceivably absurd, were it not rendered impossible by both the text of the Constitution, the causes which led to its formation, and the express declarations of its authors that "the importance of the UNION, in a commercial light, is one of those points about which there is the least room to entertain doubt, and which has, in fact, the most general assent of men who have the least acquaintance with the subject. *This applies as well to our intercourse with foreign countries as with each other.*" (Hamilton, in the Federalist.) These men committed no such solecism as this. They drew their inspirations touching the magnitude of this subject of internal and foreign commerce from no meager or turbid fountains. We find them accordingly appealing to the practices of all other States, and the sad experiences of their own under the fatal defects of the Confederation. They looked to the Roman model, and found that, not with

the prefectures, not with the provinces, not with the dioceses, but with the central Government was lodged the business of connecting its four thousand cities and one hundred and twenty millions of people, through the instrumentality of those roads of stone whose ruins yet remain the wonder and admiration of the ages, and which radiated from the Forum to every part of the world—the hills of Scotland at the North, Jerusalem at the East—and which, during four centuries, held the commerce, the population, and the military strength of that empire in the grasp of a single State. And, in defense of that very clause which declares that "Congress shall have power to regulate commerce amongst the several States," Mr. Hamilton, in the Federalist, reminds all who learn government from history, that

"The necessity of a superintending authority over the reciprocal trade of confederated States has been illustrated by other examples as well as our own. In Switzerland, where the union is so very slight, each canton is obliged to allow to merchandise a passage through its jurisdiction into other cantons, *without an augmentation of tolls.* In Germany it is a law of the empire that the princes and States *shall not lay tolls or customs* on bridges, rivers, or passages, without the consent of the emperor and diet; though it appears, from a quotation in an antecedent paper, that the practice in this, as in many other instances in that confederacy, has not followed the law; and has produced there the mischiefs *which have been foreseen here.* Among the restraints imposed by the union of the Netherlands on its members, one is that they shall not establish imposts disadvantageous to their neighbors without the general permission."

And in 1867, in organizing that North Germany out of all the members of the Fatherland, which has suddenly become the first power of the Eastern Continent, and at once the terror and admiration of all surrounding States, her matchless wisdom and sagacity have created one "Federative Empire," under a constitutional charter, by which they form the fifteen States into one "Eternal Union" ("Ewigen Bund") "for the protection of the territory of the Union and its laws, as well as for the care of the welfare of the German people;" and to the Federal Council and Parliament of that Union their charter has given the exclusive legislative control over

"1. The customs; 2, *the commercial legislation*; 3, the coining of money, the weights and measures; 4, banking questions; 5, questions relating to the rights of nations and aliens; 6, patents for inventions; 7, the *protection of German trade;* 8, the *railways and roads, the postal and telegraph services;* 9, *the navigation of rivers;* 10, the common-law procedure, the commercial law, and the laws upon change."

Our limits will admit of no further appeals to the principles and practices of all enlightened States in the nurture, protection, and de-

fense of the internal and foreign commerce of the entire people. But these are ample, in demonstration of the truth that by the settled principles of such Governments, that commerce which is common to all the people must be under the care of that government which is over all the people, and that such care is exclusive and plenary, embracing every power and duty needed to foster, develop, defend, and regulate the commerce itself and all its instruments and channels.

We now turn to some contrasts between the practices of our own and of other nations in the care taken of these vast interests.

The history of effort in the defense of the productions and commerce of England is one of the most instructive chapters written by any people. From the period of A. D. 1660, down through more than two centuries, there has not been an hour, day or night, in which her boards of trade, her privy councils, her secretaries, her parliamentary committees, her legislature, her diplomats, her kings have ceased to watch her productions or their exchange. By the official and systematic collection and study of statistics; by protective, defensive, and retaliatory laws and treaties; by subsidies; by ship building; by road building; by navy building; by training-schools for mechanics, seamen, and artisans; by commissions in Parliament and out; by colonial acquisition; by parliamentary, journalistic, and scientific discussions; by aid to schools of polytechnics; by bounties to authors and discoverers; by pensions whilst living, to inventors, discoverers, explorers, and men eminent in scientific and mechanical achievement, and, when dead, by the bestowal of honored sepulturage at Westminster, or beneath marble or brass in other places of renown, that little island of mists, winds, and long nights has arisen like an exhalation, the very prodigy and spectacle of nations. See what she was, when that policy began, of nourishing and advancing her internal resources and commerce, at the beginning of Elizabeth's reign! Then in the kingdom there was not a turnpike-road, not a carriage, not a brick house, not a canal, scarce a chimney; not two thousand horses suitable for cavalry; scarce a ship in her navy—and borrowing a navy from Hamburg or from Antwerp—scarce a pound sterling in her treasury—commerce carried in canoes—gentry riding in dog-trucks and sleeping on straw with dogs and fleas—highway robbers constituting an estate of the realm—her queen banishing indigo dyes because they smelled badly—her coinages less in a hundred years than those of one of her colonies now in a single year—the island a forest or a fen, and the common people emerging from semi-barbarism. See England now! To say of that island that it is a garden is inadequate. To say of her

commercial and manufacturing cities that, as aggregations of power, of energy, and of all-mastering wealth, they are immense, is commonplace. To pass along her docks and say that the masts of the ships, which girdle the island with "walls of oak" and of iron, are endless forests, gives no approximate idea of their number. To pass along the lines of her canals and railroads, and through the store-houses, marts, and bazars which mark their termini and their stations, and to say of her productions and the elements of her trade that they are prodigious, scarcely aids in getting a conception of their inconceivable magnitudes. To declare of the value of the property of the island that it is thirty billions in gold, and the annual income of the people is four billions and seventy millions, only confounds us by staggering numbers.

But it is not in these directions alone, or even mainly, we look to catch glimpses of the effects, upon England, of the care of her Government about her internal and foreign productions and commerce. England has to-day on her islands six hundred millions of workers. That is about six-tenths of the population of the globe. They ply ceaselessly, willingly, on and on, immortal and forever. Not one of them consumes a farthing's worth of the stupendous aggregate of their productions; and not one of them ever peoples a jail or poor-house, or commits a breach of the peace; and they are so prolific that their numbers have increased three hundred millions at least, during the present century. And this army of English workers—six hundred millions strong by actual count in the last census—is no myth, but a literal physical fact. The muscle force, and nerve force, and bone and brain force of six hundred millions of men are ceaselessly at work in England piling up her prodigious wealths. These six hundred millions of England's undying workers are "THE FORCES OF NATURE," furnished by God—bountiful, free—her winds, her waters, her fires, her vapors, her coal, her electricity, her gravitations, her momenta, her chemical affinities, her magnetism, and her light—all these tamed, trained, subdued, skilled, and yoked, by her mighty genius, to her machinery—machinery as intelligent as its author and contriver, the human intellect, and mighty, like the God whose elements propel it.

And this is the army of England's workers! And in the science which England's first economist named "Wealth of Nations," what values are attached to the simple abstract "capacity" of England to create that machinery, the fountain of her productions and her commerce, and to tame and yoke to it all the forces of nature? Some con-

ception of the wealth there is hoarded in that mere "capacity"—a capacity only acquired by whole centuries of governmental watchfulness and work—is obtained by realizing that should you, by one universal conflagration, consume every city and hamlet and house in England, and swallow up, in earthquakes, every vestige of human labor on the island, and then should sink in the sea every ship she floats, and should leave to her, of the material wealth of her ages, not a groat-worth besides her ability instantly to reëndow, by her amazing skill, this six hundred millions of immortal workers, you will scarce have touched the real wealth of England; and, in a decade of years, these workers would re-create upon the surface of her island-home and of all seas, that wealth which in the past could be produced only by a decade of centuries.

While these *general* views of the results upon industries, production, wealth, power, and happiness of a nation, which come from their wise culture and defense by the Government, should be of immense value to us as lessons touching our duties to our own people, yet there is another class of facts we invoke as more specific in their application to the subject of this Article, to wit, our duty, as a Government, toward the internal productions and commerce of the States. These facts we can only point to as indicative of the ceaselessness and the magnitude of the work and the care bestowed by the British Government upon the single matter of her internal commerce, and especially the rates of charge by the railroads and canals of the kingdom; and we can not, for want of space, do more than indicate the principles reached in these managements of internal commerce.

This ministerial and parliamentary attention to railroad charges had its most distinctive development about the time of Victoria's accession to the throne. One of the very first steps taken for the securement of equable and just rates of charge for transportation was the organization of a committee of Parliament, in 1839, of which Sir Robert Peel was a distinguished member, charged with this duty; and which pursued their investigations for years and with the most thorough research. Their reports and those of similar committees in succeeding years, resulted in the two acts of Parliament attempting the regulation of this subject, passed in the 3, 4, 5 & 6 Vic. In 1844 a strong committee was appointed, with Mr. Gladstone at its head, to consider the whole subject of the prices of fares and freights, competition, consolidation, etc., which made long and searching reports

three in number, and resulted in the act of 7 and 8 Vic. (1844), regulating the rates of profit and charges allowed to railroad companies, and providing for government purchase of these roads on certain terms. In 1845, Lord Dalhousie's Railway Board was constituted, under and with the Board of Trade, charged with the duty of reporting on all new railroad schemes, etc., and which made elaborate series of reports on these subjects to Parliament. Other series of reports were made by the Board of Trade each year upon every possible view of all these subjects of freights, fares, leases, amalgamations, consolidations, competition, government regulation, government ownership, etc., etc. In 8 and 9 Vic. an act was passed allowing canals to vary their rates of tolls to enable them to "compete" with and restrain railroad freights; and another to enable canals to lease other canals, and to thus form "competing lines" with railroads, and to secure "greater competition for the public advantage." Since 1845 the following clause has been introduced in all railway acts:

"Nothing herein contained shall be deemed or construed to exempt the railways, by this act authorized to be made, from the provisions of any general act relating to railways, or the better and more impartial audit of the accounts of railway companies now in force, or which may hereafter pass during this or any future session of Parliament; *or from any further revision or alteration under the authority of Parliament of the maximum rates of fares and charges*, or of the rates of small parcels authorized by this act."

As already remarked, these *samples* are given as mere indicia of that thorough, systematic, eternal vigilance which England is wont to apply to every great material interest of her people, and which for a full third of a century she *has* already applied to this single matter of "cheap transportation" upon the railways and water-lines of the kingdom. A mere catalogue of all the acts of Parliament and reports of parliamentary committees and boards of trade, and the like, which her Government has produced in the struggle to accomplish this single end, "cheap transportation" for her people, would occupy more space than is allowed for this entire Article. It must suffice, therefore, to add to the specimens above given, showing how early and earnestly this work was begun in England, the statement that as in the case of her foreign commerce, so in that of her domestic, there has not been an hour, day or night, in the last thirty-five years, when her Government has ceased to be at work investigating, debating, reporting, experimenting, legislating, adjudicating, and solving the single problem, How shall England secure to her internal commerce the low-

est rate of charge for transportation which is consistent with the just claims of the capital embarked in these channels of commerce?

In February, 1872, a joint committee of the two Houses of Parliament, composed of Fortescue, Hunt, Childers, Cave, Dodson, and Cross, from the Commons, and of the Lord President, Marquis of Salisbury, Earl of Derby, Earl Cowper, Lord Redesdale, and Lord Belper, to inquire into the subject of the amalgamation of railway companies," etc. This committee took an immense amount of testimony, and in August, 1872, made one of the most elaborate reports, covering the whole subject of "cheap transportation," including a history of the parliamentary struggle with railroad monopolies during the last thirty-three years.

It is one of the gravest symptoms we have ever seen, connected with the augmenting dangers to the people which are threatened from the growing power of moneyed monopolies, and especially railroad companies, that this committee, after surveying the whole subject in all its history, its heights and its depths and breadths, and after recommending *seriatim*, twenty-four several "remedial measures" for adoption by Parliament, to check the growth of railway monopolies and secure just rates of charge by them, conclude their elaborate report in these ominous words:

"If the above recommendations are adopted by Parliament, *they will not have the effect of preventing the growth of railway monopoly, or of securing that the public shall share, by reduction of rates and fares, in any increased profits which the railway companies may make.*"

Now contrast with these practices of the British Government in advancing and defending the productions of the toil of its people, and their commerce, the practice of our own toward that portion of our internal productions and commerce which is "among the several States," and by the express letter of the Constitution put under the exclusive care of the Federal Government. To ascertain the condition, extent, burdens, necessities, instrumentalities, channels, or elements of that commerce "among the several States" which is internal and not carried on upon our navigable waters, since this Government began it has adopted not a single act, created not a single board, bureau, officer, or clerk—has collected no statistics, made no expenditures, and taken not one hour's concern. And even the statistical apparatus with which our Government is provided in its Census Bureau—charged with inquiries not at all directed to the matter of "commerce among the States," but *incidentally* touching

subjects entering into that commerce, such as production of agriculture, manufactures, and mines—is so completely defective as to extort from our Commissioner of Census, in his very last report, the confession that this census report, in matters relating to our productions and wealth, is "at best but the *opinion* of one man or body of men in each State, acting under advice, in the collection of material and in the *calculation* of the several elements of the public wealth." And as to the census statistics of our agriculture, he says: "No estimate of the agricultural productions of the United States is known to the superintendent which is entitled to much more than the credit of good intentions."

Here we must end this contrast between the care of our own and of other governments about the productions of the labor of the people. The lessons which the contrast furnishes are easy of comprehension and of the gravest possible moment. The anomaly which the total neglect by us of these immense interests presents is most strange and nearly inexplicable. It has no parallel in history, and only an apology in the conditions under which it has occurred. The provisions of the Constitution confiding to Congress "the regulation of commerce among the several States," has been nearly a dead, and almost an ignored provision of that great instrument. It has been this, although nothing is truer in our history than that which has been uttered times innumerable by our Supreme Court and ablest jurists, and which is repeated by one of the members of that court, in a recent decision affirming the power and duty of Congress to regulate and protect inter-State commerce carried upon railroads. He says, "The shackles with which the different States fettered commerce was one of the main causes which led to the formation of the Constitution." And it was to remove these shackles, and to confer upon the common Union the duty of cherishing and defending what exists among these States, that this provision as to inter-State commerce was inserted in that instrument. To these considerations must be added such as the following: That the value of our internal commerce is ten times greater than that of our foreign commerce with all nations; that we pay for internal transportation, each year, more than double the entire annual revenues of the United States; that the value of commodities moved by railroads, in 1872, was ten thousand millions of dollars ($10,000,000,000), and the gross receipts of these roads in the same year were $473,241,055; that the commerce of cities upon the Ohio River alone is over $1,600,000,000 per annum, and that the unjust or unnecessary tax paid for transportation of this commerce

every year exceeds two hundred and fifty millions of dollars; and that this tax is not a moiety of the actual loss to the people resulting from the failure of the Government to discharge that duty for which, preëminently, the Union was created; that this unjust and unnecessary tax and loss may, owing to our natural facilities for water transportation, and our ability to add to and justly regulate the means of railroad transportation, be readily prevented by a wise exercise of the power of Congress over this subject, and this without the expenditure of one-half of this tax and loss for a single year.

This marvelous oblivion of the United States to the very existence of these stupendous interests involved in her inter-State commerce, and of the provisions of the Constitution committing them to the Federal care, has thrust into the annals of governmental progress and administration an anachronism which would have been at once impossible and inconceivable but for the active, intense, and advancing sentiment of supreme State rights which dominated our politics and Government during the first seventy years of the Constitution, culminated in secession and civil war, and perished at the overthrow of the recent rebellion. Since this sentiment of State sovereignty over matters confided by the Constitution to the united nation, and which owed its presence, growth, and domination in our affairs to the exacting demands of slavery, is perhaps, in itself, enough to account for that unnatural refusal of the Union to execute that provision requiring Congress to "regulate commerce among the States," it is not needful, in explaining the anomaly, to refer to other causes which contributed to this result. It may, however, be useful to mention the fact that, during the first thirty years of our constitutional existence, and during which this sentiment of State rights, nullification, secession, and slave domination was weakest, there was the least demand for the exercise of this Federal power over inter-State commerce; because of its relative smallness, its comparative confinement to the seacoast or great navigable waters, the absence of railroads and their growing aggressions, and the comparative cheapness of those water transportations which were then substantially adequate for the necessities of existing inter-State exchanges and trade.

As this sentiment of secession, of slave rule, of sovereignty by the States over matters common to all the people and intrusted by the Constitution to the Union, perished along with the cause of it, slavery, and since the forces of public thought have resumed here those normal operations which are their wont in all enlightened States, it would be wise for the rulers of this Republic, who have respect for

the tenures of their rule, to make early note of these facts, and be guided by their suggestive and very earnest logic.

The long line of judicial authorities completely establishing every principle of constitutional law which makes up the great doctrine of the *plenary* and *exclusive* power of Congress over the commerce between two or more States—including in "commerce" all of its elements when in the condition of inter-State transit, whether these elements be persons or things, and all of its instruments, whether ship, boat, roads, or waterways—has been made familiar to the entire reading public by the debates and reports which distinguished the last session of the national legislature. Their repetition here would therefore be improper, even did space allow. These authorities begin with the judgment pronounced by the illustrious explorer and expounder of our organic law, Marshall, in the great case of McCulloch vs. Maryland, and affirm the foundation principle of this doctrine by declaring that

"The Government of the Union is emphatically and truly a government of the people. In form and substance it emanates from them. Its powers are granted by them, and are to be exercised directly on them and for their benefit. The Government of the Union, though limited in its powers, is supreme in its sphere."

This judgment is followed by Gibbon vs. Ogden, where the same judge delivered the opinion of the court, and in which it was held that "commerce" meant not only "traffic" but "intercourse;" that power to "regulate commerce" included the power to regulate navigation; that the power to regulate this was not bounded by any State lines; that this power was also *plenary* and *absolute;* that the word "regulate" gave full power over the thing to be regulated, and excluded the actions of all others that would perform the same operation on the same thing. (4 Kent, s. p. 436, 437.) These principles being settled, embraced and made inevitable, as is well indicated by Mr. Cooley, every other element of the doctrine above stated was established by subsequent decisions. Among them are The Passenger Cases, 7 Howard; Philadelphia and Reading Railroad vs. Pennsylvania, 15 Wallace; Olcott vs. The Supervisors, 16 Wallace; Gray vs. Clinton Bridge Company, Law Register for January, 1868, and many other cases. Their elucidation will be found in Redfield on Railways, last edition, supplementary chapter; and in Cooley's Constitutional Limitations, where it is declared that

"It is not doubted that Congress has the power to go beyond the general regulations of commerce which it is accustomed to establish, and to descend to the *most minute directions*, if it shall be deemed advisable, and to whatever extent the ground shall be covered by these directions the exercise of State power is excluded."

We must here dismiss our theme, its threshold scarcely crossed and its outlines hardly marked.

The remedies for our commercial condition which seem the best sustained by the experiences of all other nations and by the results of investigations at home, and which the writer of this inclines to favor are, in general outline, the following:

1. The systematic and periodical collection, compilation, and discussion, by Federal official forces, of the statistics of labor, wages, production, prices, transportation, rates of fare and freight, state of demand and supply of transportation, the progress of and opportunities for increasing transportation, and the like. These to be presented to Congress through the proper Department, with the results of their consideration by such Department.

2. Laws restraining unequal and excessive tax by the common carriers of inter-State commerce, and who were not created under special Federal direction, at least to the extent of compelling the publication of rates of charge, of prohibiting the greater rates of charge for the shorter distance, and of prohibiting increase under designated periods of published rates of charge.

3. Provide by law for the immediate construction of at least one line of double-track freight railway, with suitable branches, from New York to the Mississippi River, and thence West; this to be open to the use of citizens, at tolls designated by law, and not in excess of what will suffice to keep the road in repair and pay ordinary interest on cost of construction, if constructed by private capital, and if by the United States, then not in excess of what will keep the road in repair and create a sinking fund to reimburse the cost of construction in a designated period.

4. Provide by law for the immediate completion of the great water-lines from East to West of which our lakes and rivers now form parts; and also the improvement of the mouth of the Mississippi River.

# BOOKS.

MODERN DOUBT AND CHRISTIAN BELIEF. A SERIES OF APOLOGETIC LECTURES ADDRESSED TO EARNEST SEEKERS AFTER TRUTH. BY THEODORE CHRISTLIEB, D.D., *Preacher and Professor of Theology at Bonn.* TRANSLATED, WITH THE AUTHOR'S SANCTION, BY THE REV. H. U. WEITBRECHT, PH.D., AND EDITED BY THE REV. T. L. KINGSBURY, M.A., *Vicar of Easton Royal, and Rural Dean.* NEW YORK: SCRIBNER, ARMSTRONG & CO.

TO comprehend these Lectures of Prof. Christlieb, we must steadily keep in view their purpose and history. They were delivered at Albion Hall, Islington, London, to German audiences, composed mostly of cultivated men, with a general belief in revelation, often more or less disturbed by the peculiar skepticism of the times. Their adaptation to similar classes of persons in every part of the world is accounted for by the circumstances of their origin. Perhaps, also, beyond such classes their influence will not be specially striking.

The first lecture treats of the Existing Breach between Modern Culture and Christianity. In no other part of the volume are the grasp, candor, and power of the author so well evinced. He concedes that thousands of educated persons who acknowledge the morals have discarded the faith of Christianity. The causes of the breach he describes as historical, scientific, ecclesiastical, political, social, and ethical. They began with Celsus and Lucian, were stimulated by the exaggerated freedom of the Reformation, intensified by the efforts of the English, French, and German infidels of the succeeding times, and urged forward to the present crisis by Kant, Fichte, Schelling, Hegel, Schiller, Hume, Strauss, Baur, and Renan. The loss of spiritual life in the Church, her intolerance, her moral corruptions, her formal orthodoxy, her persecuting spirit, her wealth and arrogance, her sectarian disputes and political complications, aggravated difficulties by leading men to mistake a counterfeit and distorted semblance for the substance of Christianity. Prof. Christlieb does not conceal the extent of the breach which has been

made by the causes he describes. He represents, more especially in Germany, the culture of towns as widely alienated, universities as often hostile, many half-educated teachers as skeptical, religious instruction as meager, while the very songs of pupils in schools and colleges breathe out atheism. The periodical press is frequently bitter in its oppositions. Europe and America are thus filled with publications assaulting Christianity by arguments against the faith furnished chiefly from the fields of natural science.

Our author, in showing how the breach between Culture and Christianity may be filled up, exhibits a most noble and generous catholicity, and a profound acquaintance with his subject. He has evidently penetrated deeply into the essence of the religion of the Bible, caught its genius, and imbibed its spirit. His style often glows with the vigor of his thoughts. He sets forth Christianity as itself the highest culture, absorbing into itself the learning of all ages, the patron of letters, the nurse of erudition, the mother of popular education—the very manhood and perfection of our humanity.

We regret that we can not follow the author in a careful analysis of his succeeding seven lectures, which treat, in order, of Reason and Revelation, Modern Non-Biblical Conceptions of God, the Theology of Scripture and of the Church, the Modern Negation of Miracles, Modern Anti-Miraculous Accounts of the Life of Christ, Modern Denials of the Resurrection, and the Modern Critical Theory of Primitive Christianity. Perhaps it is sufficient to remark that in every part of his work he exhibits the same penetration into the essential as distinguished from the accidental in Christianity; the same minuteness and extent of learning; the same admirable and exhaustive arrangement; the same Germanic patience of investigation, catholicity of spirit, and tender regard for the prejudices and ignorance of the enemies of Christianity. He remembers what theologians usually forget—that they themselves, by their bigotry, their intolerance, their divisions, their persecutions even unto blood, have been greatly responsible for those horrible distortions of the religion of the Bible which arouse hostility, and cause truth itself to be assaulted as imagined error. Voltaire was not wholly to blame in seeking the overthrow of that spectral monster he mistook for Christianity. Byron and Shelley, had they been followed by the compassion due to the follies of erring youth, might not have been driven to fury and despair, nor have infused into their own times and future generations the poison of perverted genius. Prof. Christlieb is a model for all coming religious controversialists. His book will

be an enduring contribution to the apologetic literature of Christianity, and take rank with the very best productions, ancient or modern.

In one single, but important point, we are compelled to differ with him. He most clearly and beautifully sets forth the Consonance between Revealed Religion and Natural Theology. He truly says that faith in our own existence, and that of the external world, lies at the basis as well of science as of religion—that to it is opposed unbelief, not knowledge—that faith is the masculine and productive power, while reason is feminine, and receptive—that the two are one eternal harmony—that Christianity is the manhood of our race, and that any step in supposed advance is toward senility. He remarks that submission brings light and assurance. If Christianity be truth, of course any path leading to it, if pursued, will terminate our struggles. But can the skeptic be convinced of this by a demand upon him to believe before he can proceed to reason? Can you require him to yield his intellect to the mysteries of revelation before you furnish him arguments sufficient to support his trust? By such an approach to him, do you not excite his prejudice, and even his contempt? Here, by some unguarded statements, the author has greatly weakened the force of his admirable book.

Christianity in a far different manner must meet the skeptical culture of these bold and restless times. If she bids the doubter first believe, and then reason, she will be met with scorn, and her advances repulsed as dictated by a mere clerical authority presupposing the ignorance it would dupe and subject. She must claim as her standing-ground no more than science claims—that faith in our personal existence, in an external world, in the testimony of our senses, and the deductions of our intellects, which lies at the basis of universal knowledge. The materialistic philosophy no more than Christianity can advance without such a faith as a postulate. Prof. Christlieb has incautiously confounded this faith—which is an instinct, an intuition, an essential condition of the human mind above and beyond reason—with that faith in revelation which has its only true support in reason. Upon the former faith, Christianity and science alike rest. Where do they separate? When Christianity presents those supernatural facts which distinguish her, and challenges reason to test her proofs.

Take, for instance, the resurrection of Jesus Christ! That established, all other mysteries are easily conceded. Secure the citadel, and the outworks are not hard to hold. But how gain credence to

this great central fact which carries with it all else? By calling on men to first submit their minds, and then examine our proofs? Just the reverse! Christianity, in establishing the resurrection of her Master, appeals to the eye, to the ear, to the touch, as much as a chemist in the experiments of his laboratory, or an astronomer when he looks into the heavens with his telescope. The whole investigation involves a simple question of testimony. It relies on the reports of the senses, and the inferences of the reasoning faculties applied according to those rules of induction, and of evidence, by which you verify a law of physical science, or prove a fact to the satisfaction of a jury.

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CANADIAN PACIFIC RAILWAY—EXPLORATORY SURVEY. REPORT OF SANDFORD FLEMING, *Engineer-in-Chief*. MCLEAN, ROGER & CO.: OTTAWA.

THE project of constructing a railway north of Lakes Superior and Huron, along the great Valley of the Saskatchawan, and across the Rocky Mountains to the Pacific Ocean, is an old one, although the first surveys looking to that end have been but very recently undertaken by the Canadian Government, under a pressure of political necessity, and presumably with slight expectation of speedy revenue.

A large portion of the country sought to be developed has hitherto been almost a *terra incognita*, save such information concerning it as has from time to time been gathered from trappers and traders attached to the Hudson Bay Company's service. The stretch of country embraced in Mr. Fleming's exploration covers a length of about 2,700 miles, with a width varying from 300 to 500 miles, the latter being the coast length on the Pacific, exclusive of indentations, of British Columbia. Beyond the trading-posts, almost the only region of this vast tract of territory that can claim the dignity of being a settlement, is that portion known as the Red River country, just south of Lake Winnipeg, with which newspaper readers have become more or less familiar during the last year or two, as the seat of the Riel insurrection. The settlement, although an old one (founded by Lord Selkirk in 1812, on a grant of 12,000 acres from the Hudson Bay Company), is not large, the population at no time having exceeded, we believe, 7,000 souls, mostly shiftless, improvident half-breeds. It is a diminishing population, owing to lack of immigration and the gradual removal of families. Fort Garry is its center, and is located at the junction of the Assineboine and Red rivers.

On the Pacific side, a large tract of territory was resumed by the "Crown" from the Hudson Bay Company; and in 1858, a colony, "British Columbia," was formed, called into being by the discovery of gold, and the consequent influx of population, which some authorities estimate to have reached 20,000 people, mostly Californians.

Vancouver's Island, southwest of British Columbia, and separated from the mainland by a narrow strait, has the settlement of Victoria at the extreme southern end. This town is of growing importance since the discovery of gold in British Columbia. Indians make up the rest of human life in this vast territory, but they are not numerous.

The physical features of the country, from the "Lakes" to the Pacific, we have now for the first time described in a scientific, connected manner, in the report of Mr. Fleming, which, while preliminary in character, is sufficiently detailed to enable us to form a fair conception of the magnitude of the undertaking, and to judge of its expediency other than in a political sense. Mr. Fleming has told his story well, and has admirably condensed the information thus far obtained. It is noticeably free from the rhetorical rhapsodies that have characterized some other Pacific reports that might be named: neither has he discovered any "isothermal line," where roses bloom all the year round, nor where the agriculturist may find his paradise, yielding two crops in the season. The question before Mr. Fleming was purely an engineering one, and was substantially to determine whether or not it was possible to locate a line, with reasonable grades, within British territory, connecting the railway systems of the Provinces with the Pacific coast. The answer to this question is made in the affirmative, although the fact is not concealed that there are many portions of the line which could only be bridged or graded at vast cost. In order to approximate a conception of the country examined, it will be most convenient to consider it under three grand divisions: the "Western or Mountain region," the "Central or Prairie," and the "Eastern or Wooded" region. The former, a complex, mountain-tossed region, is known as the Rocky Mountain zone, and which can be subdivided into the Rocky Mountains proper, and the Coast or Cascade range, a continuation of the California Sierras. Between these two ranges of mountains there exists an elevated plateau, from 3,000 to 4,000 feet above the sea-level, and having its surface furrowed and grooved with watercourses and inferior mountain ridges. Numerous lakes occur in deep depressions, and the timber is irregularly distributed. The Cascade range skirting

the Pacific coast is as near as may be 100 miles in breadth, and presents, on the west flank, a bold and defiant aspect. Mr. Fleming describes it as Alpine in character, with a deeply indented coast line, in some cases the ocean inlets striking into its very heart, between precipitous walls of rock, for many miles. One case is mentioned where one of these inlets is 80 miles long, capable of affording harborage for the largest vessels afloat, and in many places of unfathomable depth. The great barrier of the Rocky Mountains, lying some 400 miles from the coast, and generally parallel to it, rises at times into the region of perpetual snow, with flanks deeply gashed, and throwing out spurs like great buttresses, between which the rivers of the plains take their rise.

The *Central* region is the northerly extension of the basin of the Mississippi, with a natural drainage summit, turning the waters to the Gulf of Mexico and the Polar basin respectively, nearly coincident with the artificial one established between the American and British Governments. The river systems in this division flow in deeply wooded channels, and, beyond their crossings, no engineering difficulties are met with in a stretch of 1,000 miles. Water supply is uncertain away from the river bottoms, and a scarcity of timber, not sufficient for fencing or house-building, to say nothing of fuel, is painfully apparent over *hundreds* of miles of this district. There are indications that coal may be found, and large bodies of iron ore have been reported between the North and South Saskatchawans.

The *Eastern* or Woodland region covers a tract of wilderness stretching from the settled portions of Ontario and Quebec, on the north bank of the St. Lawrence, to the province of Manitoba. It is a region densely timbered, rough, rocky, and uninviting, with no agricultural resources. Previous to this exploration, nearly all the knowledge of the country "was confined to the canoe routes traveled by the officers and employees of the Hudson Bay Company. There were hundreds of miles, which, as far as was known, had never been penetrated by civilized man."

Such, in brief, is a summary of the physical features of the country through which the Canadian Government proposes to build a railway, and which, taken in connection with the population sought to be benefited, impresses us as a scheme simply appalling.

Inasmuch as the key to the whole situation was in overcoming the obstacles in the Western and Eastern divisions, the energies of the exploration were confined principally to these portions of the territory. All information obtainable went to show that the "difficul-

ties to be overcome in these divisions were of the most formidable character." The objective point on the west end of the line, it was desired to have south of the fifty-third parallel, if possible, opposite the Vancouver group of islands. So far as the Rocky Mountains are concerned, a number of passes feasible for a railway were discovered—one, the Yellow Head Pass, near the fifty-third parallel, being regarded as peculiarly favorable. Very serious difficulties were found in "piercing the Cascade range, and in descending from the level of the elevated plateau, in the heart of British Columbia, to the level of the ocean." Some seven lines were surveyed, and while Mr. Fleming makes no recommendation as to which should be adopted, until further explorations have been made, he reports very confidently as to the feasibility of obtaining a connection with the Rocky Mountain passes, a result that the Canadian Government had fears of not obtaining, judging from some very unfavorable reports of Lieut. Palmer in 1862. One thing, however, is certain, and that is, for any route that may be adopted, there will be more or less of the practicable extremes of curves, tunnels, bridges, excavations, and the like. Except hinting at these features of the Mountain district, the report furnishes no items of amounts or quantities. To appreciate the difficulty of Mr. Fleming's task, it must be borne in mind that up to the time of his surveys, hardly anything was known at all of the country along the Pacific coast between the 51st and 54th parallels, and what little then was known was what Vancouver had published to the world eighty years before, from whose report Mr. Fleming quotes in an appendix, as well as the observations made by Sir Alexander Mackenzie, who crossed the Cascade range in 1793, near latitude 55, in the first overland journey performed by civilized man from Canada to the Pacific.

In extending the surveys so as to connect Vancouver's Island with the mainland, it was found that the construction of a railway would involve works of a most formidable character. In order to take advantage of the islands almost closing, as it were, the straits between Vancouver and the mainland, the principal survey was extended along the north shore of Bute Inlet, fifty miles in length, and across the Valdes Islands, and separating channels, to the Island of Vancouver, making in all eighty miles of railway construction that would satisfy the most ambitious engineer. The channel openings must be bridged in clear leaps of from six hundred to fourteen hundred feet. After striking Vancouver, the line would be of ordinary character from Seymour Narrows (the point of crossing from the

Valdes) to Victoria, a distance of one hundred and sixty miles. Independently of connection with the mainland, there is very little question but a line will be built at no distant day along the eastern coast of Vancouver, to develop the known mineral wealth of the island, which, together with good agricultural resources and a salubrious climate, ought to invite a large industrial population. The importance of Vancouver to British Columbia as a base of supplies is very great, as well as in a political sense to the Home Government—points, no doubt, which are thoroughly appreciated.

Returning to the eastern end of the survey, after innumerable hardships, three lines were selected as practicable for connecting the Prairie or Central region with the Provinces. They are all as near as may be of the same length, in round numbers one thousand miles, and in an engineering point of view they are much more favorable as to grades, curvatures, etc., than it was hitherto supposed possible to obtain. The north shore of Lake Superior is rugged and precipitous, forcing the lines some distance back into the interior. By means of branches the waters of Superior can be reached, and utilized. From Lake Manitoba to Superior, at Thunder Bay, is about five hundred miles, the building of which line would probably satisfy for many years the requirements of a connection between Manitoba and the older Provinces, yielding the remaining six hundred miles to navigation on the waters of Superior and Huron. The maximum gradient ascending east on this five hundred miles, is given by Mr. Fleming as twenty-six feet to the mile, a truly remarkable result, few of our important trunk lines being able to show the like. Looking to the Red River country, Province of Manitoba, as one of the great granaries of the future, Mr. Fleming makes some comparison of distances which are interesting—and draws a conclusion that (due to shorter distance) the "Canadian line will not only command the traffic of Manitoba and the whole northwest, but that it will be in a position to draw traffic from Minnesota, and the territories of the United States southwest of Pembina." From Fort Garry to Toronto, via Canadian line, there is a saving of four hundred and sixteen miles over the route via Pembina, Chicago, and Detroit, and a saving of six hundred and thirty-seven miles to Montreal, in each case the comparison being made for an *all rail* route. From Fort Garry to Sault St. Marie, "water route," the saving in favor of the Canada line is one hundred and ninety-two miles over any line built, or proposed to be built, in connection with the Northern Pacific—the one striking Lake Superior at Nipigon

Bay, and the other at Duluth, immortalized by Mr. Proctor Knott in Congress.

Under a popular impression, one has only to keep going northerly to meet a continually lowering temperature, which, while generally true, is largely modified by the conformation of continents, ocean currents, or the height and alignment of mountains. So much is this the case, that the climatic observations in connection with the proposed line of the Canadian Pacific road, north of the 50th parallel, warrant Mr. Fleming in the conclusion that all difficulties arising therefrom can be overcome in the usual way. With the exception of a few points, the snow-fall is not excessive. Through the woodland section the snow falls to a less depth than around the city of Ottawa, from Manitoba to Nepigon Lake being as much as fifty per cent. less, and increasing easterly and southerly from the latter point. Through the Prairie region, the snow rarely exceeds a depth of two feet, while through the mountain region climatological phenomena are more marked, and the snow-fall more varied. The humid winds on the Pacific slope are expended against the mountain barriers in copious rains in summer, and heavy snows during winter, while on the eastern slope comparatively little precipitation takes place. Meteorological observations were made during parts of three years, and the results tabulated and examined by Prof. Kingston, of the Toronto Observatory. At certain points the snow was noted four and five feet deep in unprotected parts of the North Thompson River. Early in March there were found two feet of snow in the Yellow Head Pass of the Rocky Mountains. Twenty-two miles east of the pass, during a whole winter (that of 1872–73), the snow never exceeded a depth of six and a half inches. An instance mentioned by Mr. Fleming conveys a fair idea of the climate east of the Rocky Mountains. There were engaged in the survey about one hundred horses and mules, which were obliged to shift for themselves during a whole winter in the approaches to the Yellow Head Pass. Notwithstanding the poor condition they were in when turned out, not one was lost, and all resumed work in the spring.

The snow difficulties are believed to be concentrated in the Cascade range, any of whose passes are subject to heavy falls. They would have to be guarded against by means of snow-sheds and other like contrivances found effectual on the mountain division of the American Pacific roads. After weighing all the facts and circumstances thus far collected, there would probably be fewer impediments during the winter season in operating a line of railway across the British pos-

sessions than on lines now worked in the eastern provinces—excepting of course in the passes of the Cascade.

It is almost impossible to bring home to the casual reader the trials, sufferings, and heroism developed in a great railway survey through a wilderness more than two thousand miles in extent—or to realize the executive capacity required to organize the forces and equipment so that the results will all tend to a common end. Communication is frequently cut off for months, while the various parties in the field are fighting with prodigious courage the dangers thronging the wilderness. Fire, water, hunger, wild beasts, all play their part in the mission of destruction; and so bravely was the work done on the Canadian survey, that twenty-one lives are recorded lost. It is satisfactory to note that the Government, persuaded of this hazardous service, has granted a pension to the representatives of the deceased.

Accepting the fact that the Canadian survey has developed the feasibility of a railway route across the continent inside of the British possessions, the question of the wisdom of actually building such a line forces itself upon the attention. Most public works are undertaken with a view either to direct or indirect profit, and rarely for simply pandering to national pride. One would think that shrewd and calculating England would weigh very carefully the paying character of any such scheme before consenting to spend her millions on a line, which would be much in excess of the cost of the American Pacific roads. The construction and equipment of the Canadian line, for two thousand seven hundred miles, would cost over rather than under $50,000 per mile, or a gross outlay of one hundred and thirty-five million dollars—a cost ridiculously out of proportion to the meager population to be benefited, or any possible indirect advantage to the Colonial or Home Governments. The inducement to immigration that might be opened up as a future source of wealth, would find an overpowering competition in the already accessible unsettled lands of the States ranging through a climatic belt that appeals to every nation under the sun. Whether the immigrant comes from Norway or Italy, there is some locality in the broad possessions of the United States where the climatic conditions of his native country can almost if not quite be paralleled. Superadded to which is the traditional character of the American Union as the home of the oppressed, and having a government where the ideas of freedom and equality form the chief corner-stone. There is room for millions upon millions more of Europe's overplus population, and so long as the United States are

governed on the same principles as have made them what they are, the tide of immigration will never be north of the boundary line, at least as long as Canada yields allegiance to England, or until "manifest destiny" blots that boundary line forever out of existence.

In the face of present facilities and areas of production, we fail to see that the condition of the world's markets or population requires any enlargement in this direction, for many years to come. What if the Red River country be a splendid wheat-growing country, or what if mineral wealth be scattered and hidden in the recesses of this great northern wilderness? Neither can be a source of wealth unless present facilities for supply are unequal to the demand. The United States to-day, with vast resources still undeveloped, is over-producing enormously, both in agricultural and mineral products, to which she can add to an almost unlimited extent, at a small outlay for development, just so soon as the markets of the world make the demand. The deficiencies of continental crops, this year, can more than be met from the surplus of the State of California alone.

A century hence the Canadian wilderness may present attractions sufficient to people the line of the proposed railway. Such attractions will not exist, however, until after the yet unsettled lands of the United States have become so thickly peopled as to enormously increase their value, and extinguish the inducement of cheapness now held out to the immigrant.

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THE LIFE OF CHRIST. BY FREDERIC W. FARRAR, D.D., F.R.S. TWO VOLUMES. NEW YORK: E. P. DUTTON & CO.

NO really satisfactory life of Jesus of Nazareth has been written in the English language since Jeremy Taylor's work was published two centuries ago, and that has long since ceased to be generally read. It is not an undertaking which a wise and modest man readily puts his hand to. It demands peculiar qualities of mind and heart. We can easily see one side of the life of Christ, and present our fresh and glowing convictions upon that; but it is not easy to give a comprehensive yet minute biography. The impossibility of this is one of the strong inferences that He was God and man together in one person. Prof. Seeley, in *Ecce Homo*, has wonderfully grasped one side of the Master's life and work; Renan has made a brilliant picture of his humanity; Mr. Beecher has approached the subject with masterly genius and unusually broad human sympathies, but with a minimized theology; Strauss has brought to bear against Christ's reality

as man a marvelous study of the Gospels themselves; Lange has come to the life of Christ with a peculiar sympathy and affectionateness; Bishop Ellicott has studied it as a careful critic and theologian: Archbishop Thomson, within Smith's Dictionary of the Bible, has placed the only biography of Christ which has been adapted to general reading, and there it has been entombed for all but scholars. Commentary after commentary has been published, essay after essay, but we have no work in any language which meets the popular demand, and presents the facts in language easily understood, with that filling in of the picture derived from the study of the geography, the customs, the characteristics of Palestine, and the contrasts between those days and our own times. Simple as is the story of the Evangelists, it can never bring to all minds the proper lights in which to view our Lord's work and mission. That very adaptation which we feel to be essential for children is also needed in these secular days to make the life of Christ a living reality.

The work in hand is an elaborate and carefully prepared attempt to meet the demand described. Dr. Farrar's previous studies have fitted him for this undertaking. As a linguist, as a preacher, as a scholar, few surpass him in England. He has been engaged upon his task for perhaps five years, with the express purpose of making a biography which should not be encumbered with theology, which should not favor skeptical objections, which should be learned enough for the scholar and the clergyman, and yet not beyond the capacity of plain people, which should in all points meet the wants of the present generation, if not those of ages yet to come. He has in many respects been successful. His narrative glows and sparkles with the spoils and treasures of all time. He constantly sets off his subject by the foil of this world's ambitions and attainments. His book reads like a romance, and is wonderfully rich in its references and literary attractions. Indeed, the criticism is that it is too elaborate. Its pictures often are like those of Japanese artists: there is too little light and shade. One could say of its style as Sydney Smith said of Macaulay's conversation, "Oh, for a few brilliant flashes of silence." The pages of Dr. Farrar frequently read like a Fourth of July oration. He forgets the preacher in the writer. He is too fond of adjectives. He uses words which drive people to their dictionaries, as, for instance, where he says that Christ "would not work any *epideictic* miracle at their bidding," or terms like these: "tenebrous influences," "diaphanous air," "proleptic asceticism"—thus needlessly encumbering what is really good, and giving thoughtful people

the impression that his work is cheaply done. Taken through a thousand pages this is a serious literary defect, and, did not Dr. Farrar bring to the execution of his task most substantial merits, would be much more serious than it is. In the natural desire to make his work a masterpiece, he has painted the picture in too gaudy colors. There is also an influence of another sort coming from the clothing of the simple facts of the Gospels in such ornate language. It makes the original narrative seem tame and cold by comparison, and may lessen the hold of its story upon many minds.

Like the author of *Ecce Homo*, Dr. Farrar approaches his subject mainly from the human side. We have the biography of the Son of Man rather than of the Son of God. Every step of our Lord's earthly sojourn is lovingly, conscientiously traced, and whenever His life conforms to our own experience, the confession of some saint or doctor is sure to point the moral and adorn the tale. The defect of Dr. Farrar is that he dwells so exclusively upon our Lord's humanity. In the Temptation, Christ is represented as more than man by his resistance; but not as the representative of humanity, the second Adam overcoming the weakness of the first. In the Transfiguration, nothing is made of the significance of the meeting with Moses and Elias. In the description of the Crucifixion, we do not behold the All-Atoning Sacrifice. Every thing is done for scenic effect, as if our Lord were the greatest man who ever lived; but Dr. Farrar is silent when we should have expected him to speak; for though he was not writing a theological treatise, and had some obvious limitations, he was yet attempting to portray one whose human life shaded off into the divine at nearly every step. This is indeed a very great defect. It may not lessen the popularity of the book, but it certainly detracts from its usefulness, and does not fully present the life of Christ.

Yet we would not say that Dr. Farrar's work is a failure. It is simply good as far as it goes, and no better is likely to be produced in our own time. We have a marvelously beautiful portrait of our Lord's humanity, Dr. Farrar having brought to his treasures as a student both vivid thought and original suggestions. The work is never dull, and the thousands who seek its pages for instruction will be refreshed with new and truer, if not higher views of what our Lord was to us while here in the flesh. Great ability, ripe literary skill, graphic descriptive powers, and a fine spiritual insight are conspicuous in every chapter; and taken altogether, it is the most

marked of all the many attempts in our own days to present to us the human life of the Saviour of mankind.

Dr. Farrar's real learning is seen in the notes, which often throw fresh light upon difficult questions; and in the appendix, where he discusses many points which would have loaded down the body of the work and broken the narrative. The volumes are furnished with every equipment for use, are printed with readable type on good paper, and are substantially bound.

The following is a fair specimen of the excellences and defects of Dr. Farrar's style. It describes one of our Lord's last evenings at Bethany:

"So ended that great discourse upon the Mount of Olives, and the sun set, and He arose and walked with His Apostles the short remaining road to Bethany. It was the last time that He should ever walk it upon earth; and after the trials, the weariness, the awful teachings, the terrible agitations of that eventful day, how delicious to Him must have been that hour of twilight loveliness and evening calm; how refreshing the peace and affection which surrounded Him in the quiet village and the holy home! As we have already noticed, He did not love cities, and scarcely ever slept within their precincts. He shrank from their congregated wickednesses, from their glaring publicity, from their feverish excitement, from their featureless monotony, with all the natural and instinctive dislike of delicate minds. An Oriental city is always dirty; the refuse is flung into the streets; there is no pavement; the pariah dog is the sole scavenger; beast and man jostle each other promiscuously in the crowded thoroughfares. And though the necessities of His work compelled him to visit Jerusalem, and to preach to the vast throngs from every climate and country who were congregated at its yearly festivals, yet He seems to have retired on every possible occasion beyond its gates, partly it may be for safety—partly from poverty—partly because He loved that sweet home at Bethany—and partly too, perhaps, because He felt the peaceful joy of treading the grass that groweth on the mountains rather than the city stones, and could hold gladder communion with His Father in Heaven under the shadow of the olive-trees, where, far from all disturbing sights and sounds, He could watch the splendor of the sunset and the falling of the dew."

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THE THIRTY-NINE ARTICLES OF THE CHURCH OF ENGLAND, EXPLAINED IN A SERIES OF LECTURES. BY THE REV. R. W. JELF, D.D., *late Canon of Christ's Church, Oxford, and sometime Principal of King's College, London.* EDITED BY THE REV. J. R. KING, M.A. LONDON: RIVINGTONS.

THE author of this volume was one of the most useful and respected of the old-fashioned clergy of the Church of England, and he deserves to be remembered, not only as a man of excellent learning and soundness in theology, but also as an admirable teacher and bright example for those who are called upon to preach the gospel. In the

present course of Lectures, Dr. Jelf employs a plain, unambitious style, using language such as a man thoroughly in earnest and thoroughly well-furnished would be likely to use in giving instruction to young men. There is indeed every where manifest in the volume a spirit of charity and meekness, combined with the clear, straight-forward teaching of the Church of England in her standards of doctrine. His attitude toward Dissenters is that of one profoundly impressed with the condition of those who have inherited dislikes and prejudices against the National Church, and who ought therefore to be dealt with gently, but firmly, and with all truthfulness. He upholds the claims of the Church of England, primarily and essentially, to be Catholic, as maintaining and putting forth in the forefront of her confession the fundamental truths of Christianity, and adhering to the doctrine and discipline of the primitive church; and he justifies her historical attitude as a Protestant church, forced by the faults of those around her, and especially of the Church of Rome, to condemn in express terms the errors and corruptions which prevailed, in one direction or another, throughout Christendom, at the time the Articles were set forth, and which have continued to prevail more or less widely ever since.

The work is in measure defective, arising out of the fact that it is a posthumous publication, and lacks, for some of the later articles, the careful hand and mature judgment of the author. As a whole, however, we can conscientiously commend the volume, as a useful companion to Bishop Harold Browne's larger and more profound work on the Articles. A list of authors quoted or used, a general index, and an index of texts of Holy Scripture add materially to the value of the Lectures.

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SERMONS BY THE REV. ROBERT S. CANDLISH, D.D. NEW YORK: R. CARTER & BROS.

WE have here a few Sermons by one of the greatest of that generation of great Scotch preachers which has departed with him, selected by the editor as representative of his mind and manner in the pulpit.

We must confess to an inborn dislike to printed sermons; but upon taking up these as an unpleasant duty, we experienced a delightful surprise. We had heard of Dr. Candlish—as a leader in the great "Disruption" of the Scotch Establishment, a profound theologian, a formidable debater—in short, the intellectual Saul of the Free Kirk;

and had conceived of him as a typical Scotchman of the clear, cold, doctrinal cast—a man in whose brain theology had been reduced to mathematical problems. And so he may have been in certain phases of his mental character, but not as a preacher. In the pulpit he seems a transfigured man: we are only conscious of the presence of a great human soul, under some pervading heavenly influence, palpitating with all human and heavenly sympathies. The one note of his preaching which makes him tower above all his generation, is its grand, massive simplicity. His text is always one embodying one great truth. This truth is the permanent center of all the subsequent vast accumulation of ideas. Every sentence adds something to his vital, assimilating central organ. This in turn seems to impart its own life to the growing mass of thoughts, and pervade them with vital heat and force. When the end is reached, we find a homogeneous whole—every function assigned its place, in perfect correspondence with every other, and with the one great central truth which is the heart of all. The sermon on "The Man Christ Jesus" is the best representative of this peculiar quality of mind—the *man* being the central thought, and every thing in the humanity of Christ necessary to its growth into the *perfect* man being gathered to it, sentence by sentence, until the portrait is complete as it can be at human hands. We believe there is nothing superior to that sermon in simplicity, and power to move the Christian heart.

If this were the only surviving fragment of Dr. Candlish's pulpit work, we could understand what Dr. Guthrie tells us, in his autobiography, a shrewd old Scotchman said, alluding to Candlish's insignificant personal presence: "There is na muckle of him—but there is muckle in him."

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THE APOSTOLICAL FATHERS: A CRITICAL ACCOUNT OF THEIR GENUINE WRITINGS AND OF THEIR DOCTRINES. BY JAMES DONALDSON, LL.D. LONDON AND NEW YORK: MACMILLAN & CO.

THE publication of the Ante-Nicene library has greatly increased the study of the earliest Christian writers, and contemporaneous with the demand that religion shall be in accord with modern thought is the felt necessity that the Church of to-day shall faithfully conform to Scripture and primitive antiquity. The general study of the Fathers, without entering into their special modes of thought, the atmosphere in which they lived, would greatly mislead. There is

room for a critical estimate of their position, their authority, their doctrines. Dr. Donaldson's volume, published ten years ago in a different shape, meets this need. It contains only the earliest Fathers—Clemens Romanus, Polycarp, the Epistle of Barnabas, the Pastor of Hermas, and Papias. It is a faithful statement of the opinions and doctrines of these men, and can be read to advantage either before or after the study of the original writers; but the best portion of the volume is the extended introduction, covering the whole period down to the Nicene Council. He meets the difficulties of those who approach the study of Christian antiquities for the first time, and especially shows the folly of believing every thing said by these writers. "My main effort," he says, "has been simply to record the theological doctrines of the early Christian writers, with an anxious desire to state accurately, without exaggeration or distortion, what they thought. I have occasionally attempted to throw light on the mode in which doctrines were developed." In the introduction he dwells upon the advantages of the study of early Christian literature, the external testimony to the writings and the internal evidence of their accuracy, the literature which has grown up around them, the opinions of the Tübingen school, the mode of treatment in the early Christian theology, and the historical survey of the treatment of this theology by later writers. Dr. Donaldson goes over the whole subject wisely and intelligently, and impartially. Himself evidently a Scotch Presbyterian, he treats both Roman and Anglican critics of the Fathers with generous respect; and simply as an introduction to patristic literature, his book is the best we have in the language. To theological students it is indispensable. Many a ritual excess would be abated, many a Protestant defect removed, if the writers of the early Church were thus critically and independently studied. If Dr. Donaldson errs upon any point, it is in so largely yielding to German criticism, to the exclusion of English and Roman works which have been numerous in recent years. His style is often harsh and crude, but his judgments upon critical points are nearly always fairly stated and reasoned.

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THE PERMANENCE OF CHRISTIANITY: CONSIDERED IN EIGHT LECTURES PREACHED BEFORE THE UNIVERSITY OF OXFORD, IN THE YEAR 1872. BY JOHN RICHARD TURNER EATON, M.A. LONDON: RIVINGTONS.

So much has been put forward recently with the intention of showing that Christianity is soon to be superseded by a more philo-

sophical system, that the Bampton Lectures on the permanence of our religion are welcome to all Christian thinkers. It is not that Christianity is in serious peril, but each period has its battle to fight with the enemies of truth, and we need the Christian champion to slay Goliath. Mr. Eaton has here attempted to

"Apply to Christianity, as a phenomenon of man's history in the world, the same standard of estimation which we use in other things, and judge of its future by the past."

His conclusion is that

"There is small reason either to fear as to its perpetuity, or to predict its fall."

His method is the critical study of the modern objections to Christianity—not those directed against the Bible in its textual integrity, but those made to Christianity as a religious system, its principles, its fundamental truths, its recognition of responsibility in man, its belief in a personal Providence, its divine system of morality, its influence as a factor in the civilization of Europe, the deductive character of Christian theology, the inferences to be drawn from its missionary character and present standing. He travels over the entire ground of recent thought and speculation, whether scientific or literary or philosophical, and puts each objection in its proper place. He makes the philosophers, generally in their own words, state their criticisms of Christianity, and then refers the objections to the fundamental principles of religion under which they are classed. The difficulty of the work is that the author attempts too much. He includes every objection, he crowds his pages with other men's ideas, and often only indicates the refutation of their errors by the statement of leading principles. The lectures are therefore less satisfactory than one could wish. They contain the materials for a treatise on the permanence of Christianity rather that the treatise itself. One has a right to expect in such a work as this that the subject-matter shall be thoroughly digested and reduced to definite statements and conclusions; but Mr. Eaton does not accomplish thus much. His materials, however, are of great value: he has opened up a vast literature; he has collected important facts; he has placed within reach what a philosophic student can use to advantage: but he has not the power, rising above his work, to compact and condense his reasonings till they glow and burn with one single purpose; nor is he able always to state plainly the arguments which he puts forward. His style is lacking in some of the first points of good, clear, strong writing.

It might be said that it were better not to touch this subject at all unless it were dealt with in a masterly manner. It is really the question of free thought to-day. Men like John Morley, Herbert Spencer, John Tyndall, Charles Darwin, and others, are constantly putting Christianity to one side, and the air is full of serious doubt, while the reasonable grounds for the permanence of Christianity are but little discussed either by believers or skeptics. The one fully believe; the other fully disbelieve. The doubts of the one are not taken up and discussed by the other upon the common ground of acknowledged facts and existing tendencies, and the steps toward union are not taken. Mr. Eaton deserves great credit for having boldly undertaken this important work of discussing the permanence of Christianity upon the ground of existing objections urged from its antagonism to many modern opinions, and from political, social, and philosophical considerations, and if he has not won the highest praise, he has every where shown a tolerant spirit, an unwearied industry, and a high purpose. His lectures are sure of being carefully studied, and they are the pioneers to a new order of evidences of Christianity, the evidences drawn from the practical work of the religion of Jesus Christ in the world.

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EULOGY ON CHARLES SUMNER. BY CARL SHURZ. BOSTON: LEE & SHEPARD.

CHARLES SUMNER: A EULOGY. BY GEORGE WILLIAM CURTIS.

MR. SHURZ'S oration has already been briefly alluded to in our July number. It will bear further comment. It is one of three masterly eulogies which this year has produced, the other two being Mr. Curtis's eulogy, and Mr. Evarts's oration on Chief-Justice Chase. The death of Mr. Sumner marked an epoch in our national history. He was the statesman of ideals and ideas. He lived to see his work done. His career had its tragic sorrows, but rounded out into wonderful completeness at the end. He was fortunate in his death and in his eulogists. He died when the great work of his life was completed, and the great insult to his name had been removed. Hardly was he buried in beautiful Auburn when the man in Congress best able, from a varied experience and intimate friendship and genuine ability, spoke judicially of his whole career, before the people of his early home, and through them to the nation; and the echoes of this oration had scarcely died away in Music Hall when another friend, our most graceful orator among literary men, came forward to make

the tribute of his order to the illustrious dead. Mr. Shurz's oration has more grasp and strength; Mr. Curtis's more polish and grace; in both the strong manhood, the discursive knowledge, the unselfish devotion of Mr. Sumner are conspicuous; both look back over forty years of contest in American political history and place the laurels of this period at the grave of Sumner; both are notably fine examples of the true eulogy, and take rank at once with that of Choate on Webster—perhaps the best oration pronounced in this country on any public man.